ANNALS of ALLERGY

Published by
The American College of Allergists

Volume 14 November-December, 1956 Number 6

A NEW APPROACH TO THE TREATMENT OF BRONCHIAL ASTHMA

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THE PHYSIOLOGIC disturbances in asthma are due primarily to three processes, any one of which, alone or in combination, can produce the cough, wheezing, and respiratory distress characteristic of this syndrome. These processes are edema of the bronchial mucous membrane, bronchospasm, and an overproduction of an abnormal thick elastic type of bronchial secretion. Practically no information is available regarding the cause of the continued asthmatic secretion and the nature of the content of this or other types of bronchial secretions. Certainly it may reasonably be assumed that substances contributed by the cells of the respiratory tract or bronchial glands are present in the bronchial material that is obtained by bronchoscopy or by other means. This material merits an analysis for the characterization of the contents of secretions and thereby to gain information in regard to tissue damage for a possible basis of a rationale for therapy.

Therapy directed toward relief of the mucosal edema and bronchospasm has been effective in most acute cases, but the perisistent troublesome asthmatic secretion has proven more resistant to the usual type of treatment. Measures controlling this phase of asthma should result in a more lasting type of improvement in the asthmatic patient. This report summarizes the results of our attempts to modify the bronchial secretion in asthma. These attempts involved the determination of the effects of a calcium glutamate preparation in addition to other commonly used therapeutic measures on the clinical status of the asthmatic patient. As one of the possible evidences of injury to lung and bronchial tissue, the study of the potassium content of bronchial aspirates was undertaken.

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TABLE I.

COMPARISON OF POTASSIUM CONTENT OF BRONCHOSCOPIC ASPIRATES

	mg/K/100 mg Dry Residue		Range of K Values in mg/100 mg Dry Residue							
			<05.0	0.51-1.0	1.01-1.50	1.51-2.0	2.01-2.50	2.51-3.0	3.01-3.5	Number of Cases
	Mean of Values	Range of Values	Distribution of Cases in Percentages							
			%	%	%	%	%	%	%	
Carcinoma of lung	0.89	0.13-2.05	17.0	52	24	5.6	1.8	0	0	54
Noncancerous lung lesions	0.87	0.18-1.61	17	51	28.3	3.7	0	0	0	53
Bronchial asthma	1.86	1.04-3.41	0	0	47	23.6	17.7	5.9	11.8	17

These determinations were performed before and during the administration of calcium glutamate (CG) to asthmatic patients and compared with the clinical findings. It was hoped to determine thereby a possible relationship between the effect of calcium glutamate on the clinical improvement of the asthmatic patient and the potassium content of the aspirates. The theoretical basis for such a plan of study will be presented in the discussion of this report.

Potassium Content of Bronchoscopic Aspirates. The potassium content of the dried bronchoscopic aspirates was determined in the Perkin-Elmer flame photometer by means of a lithium internal standard. Fifty-four cases of bronchogenic carcinoma, fifty-three cases with nonmalignant pulmonary diseases of various types, and seventeen cases of bronchial asthma of the allergic and infectious types were so analyzed. The results of these analyses are presented in Table I.

It can be seen that while the mean mg of K values/100 mg of blood-free dried residue is 0.89 for fifty-four cases of bronchogenic carcinoma and 0.87 for fifty-three noncancerous lung cases, the corresponding value for the seventeen cases of bronchial asthma is 1.86. In these determinations a correction for the contribution of red blood cells to the total potassium values must be applied to the bloody aspirates. This correction is readily carried out by determining the hemoglobin content of bloody samples by a colorimetric procedure and using the potassium content of normal blood as a basis for correction.[1]

In order to obtain repeated bronchial secretions in the same patients without resorting to bronchoscopy, the Cofflator machine was employed which gave satisfactory specimens in most instances where bronchial secretions were adequate. Each patient served as his own control. Saliva which was a contaminant in some of the specimens was separated by decanting from the specimen and only the thick typically asthmatic secretion used for the analysis of potassium. In those cases where sufficient material was available for repeated analyses, the reproducibility of results was good.

CLINICAL OBSERVATIONS AND POTASSIUM PICTURE

Case 1.—A white man, aged seventy-five, with long-standing bronchiectasis and infectious asthma with a cough of many years' duration, productive of thick, tenacious sputum and associated with marked dyspnea, was treated with most of the usual remedies including hyposensitization and various symptomatic measures. The only benefit he had had in the past was from a warm climate. After a preliminary control period which showed him to have asthmatic type rales and marked dyspnea daily, he was placed on a ten-week period of treatment during which time calcium glutamate (cg) was administered in two to three gram doses daily and alternated with a placebo (calcium gluconate) of similar appearance to the CG. He showed a definite decrease in the number of asthmatic type rales and lessening of cough and decrease in the tenaciousness of his sputum within a three-week period of CG administration. Periods of placebo administration, despite the psychologic effect anticipated, was lacking in any symptomatic improvement. The patient felt somewhat less dyspneic and his exercise tolerance increased from about one-half block of level walking to almost two blocks of level walking. During periods of upper respiratory infection however there was no noticeable improvement in his symptoms, and antibiotics of the tetracycline type gave him the most improvement at that time.

Case 2.—J. R. was an elderly white man, aged seventy, who had chronic pulmonary emphysema and fibrosis. He also had arteriosclerotic cardiovascular disease with congestive failure and infectious asthma. At the time he was seen he was in marked respiratory distress, had marked pulmonary insufficiency, and was disturbed by a chronic, persistent cough. During the control period physical examination revealed generalized asthmatic rales, labored wheezing at rest, orthopnea, and a dry cough. He had auricular fibrillation which was well controlled as to rate. He was cyanotic and was receiving digitalis, aminophylline and antihistamines with no effect. Calcium glutamate was started in 3 gram doses daily, improvement was noted within five days. There was less dyspnea and wheezing, his exercise tolerance increased, and he felt more energetic. Improvement was noted for twelve out of fourteen days. He was able to walk seven blocks. A relapse occurred after a series of emotional episodes consisting of an emergency operation in a close relative, a heart attack in another close relative, and the bursting of a water pipe which caused him to become wet, and finally his running out of a supply of calcium glutamate. Calcium glutamate was resumed within a short time and he noted improvement in three days' time. He remained well for two months until his son smashed a new car in an accident. He became nervous and upset and again developed wheezing. During the first eight weeks of treatment he was asymptomatic for seven of the eight weeks. His improvement was maintained on 3 gm of calcium glutamate per day until the weather became very inclement and all his symptoms returned. However, he still had some days that were more comfortable than previous to calcium glutamate treatment. However, the influence of the weather was stronger than any beneficial effects observed by calcium glutamate. In addition, the presence of an upper respiratory infection and fever aggravated his symptoms again. His symptoms subsided with the administration of aureomycin and terramycin. It seemed that calcium glutamate had no effect in the presence of acute infection. Calcium glutamate was stopped and short courses of antibiotics were given. Despite the use of aminophylline and ephedrine or epinephrine nebulization and the antibiotics, he was in constant distress. Accordingly, he was again placed on calcium glutamate plus 3 gm of potassium chloride per day. He noted rapid improvement, his wheeze almost completely disappeared, and, furthermore, this improvement occurred despite the inclement weather. Aside from maintenance digitalis no other treatment was used. When calcium glutamate and K chloride were stopped his symptoms returned

within one day. Accordingly, he was again placed on calcium glutamate and 3 gm of potassium chloride daily, plus digitalis maintenance, for an additional two weeks. During this time he developed an unusual desire for sugar, coincidentally with the disappearance of his wheezing and almost complete disappearance of his cough. However, the shortness of breath persisted. Increasing potassium chloride to 4 gm per day seemed to help him even more, and additional calcium glutamate also gave additional symptomatic improvement. His improvement was maintained for approximately one month and at that time he developed a cerebral vascular accident and it became impossible to administer oral medication. His chest became full of rales of all types, both asthmatic and infectious in character. He developed fever and gradually deteriorated and expired. In summary, this patient was completely invalided by pulmonary insufficiency and was near death when he was started on calcium glutamate. The combination of calcium glutamate and potassium chloride benefited him symptomatically and objectively after all other medication had failed. He survived one year after the institution of calcium glutamate therapy. During that time there was no effect on his blood pressure or cardiac function, nor were his kidneys involved.

Case 3.—A white woman, aged forty-two, with a history of asthma and allergic rhinitis of five years' duration was found sensitive to trees, dust and smoke. Hyposensitization had been administered for several years and was ineffective. During the control period she was found to be dyspneic, wheezing and coughing, and had to sleep in a chair sitting up at night because of the respiratory difficulty. Her cough was productive of a watery, greenish, thick expectoration and her chest was full of rhonchi and sibilant and sonorous rales. She was placed on 3 gm of placebo with no effect, and was then switched to calcium glutamate. Within one week her breathing was easier, there was less cough, and the sputum was more easily productive. She was able to sleep on two pillows. Her chest revealed fewer rales which were present on one side only. Her vital capacity increased from 2000 to 2420 cc. During a ten-week period of administration of calcium glutamate she showed marked improvement in all respects and this occurred despite changes in the weather. After one month of calcium glutamate therapy her vital capacity increased to 2900 cc. When her chest was finally clear, she was continued on placebo. Within a week's time her wheezing returned and she revealed rhonchi and sibilant rales bilaterally. Switching back to calcium glutamate, she showed improvement again until one day she worked in a dusty stock room and developed an attack of wheezing, cough and rhinorrhea. She was given, in addition to calcium glutamate, norepinephrine and aminophylline. Her attack was short lived and her improvement resumed. Her improvement continued so that calcium glutamate was finally stopped, as well as all medications, and she remained in remission for upwards of six months. She has been seen now for over two years and during this time she has maintained her improvement.

Case 4.—A white woman, aged sixty-six, had a history of asthma and chronic cough for over twenty years. Several bronchoscopies were done and autogenous vaccine administered for a period of three years, without relief. She had been on aminophylline and penicillin inhalation, and had had treatment for her sinusitis. Hemoptysis occurred several times, but no active tuberculosis was found. She had been skin tested several times without any significant findings. In August, 1952, she was evaluated and then given ten weekly examinations during the course of calcium glutamate therapy. Observation during the ten weeks' time during which she received 3 gm of calcium glutamate per day revealed very little subjective change in her dyspnea on exertion. There was no evidence of toxicity from the drug. There was a definite decrease in the asthmatic type of rales. Her vital capacity increased

slightly from 1380 to 1580 cc. In the presence of an upper respiratory infection the rales never became as numerous as they had always done previously. After stopping calcium glutamate for one week, rhonchi and sibilant rales returned. This patient

Chart 1. Potassium Content of Bronchial Secretion in Asthmatic Patient No. 5 as Affected by Calcium Glutamate

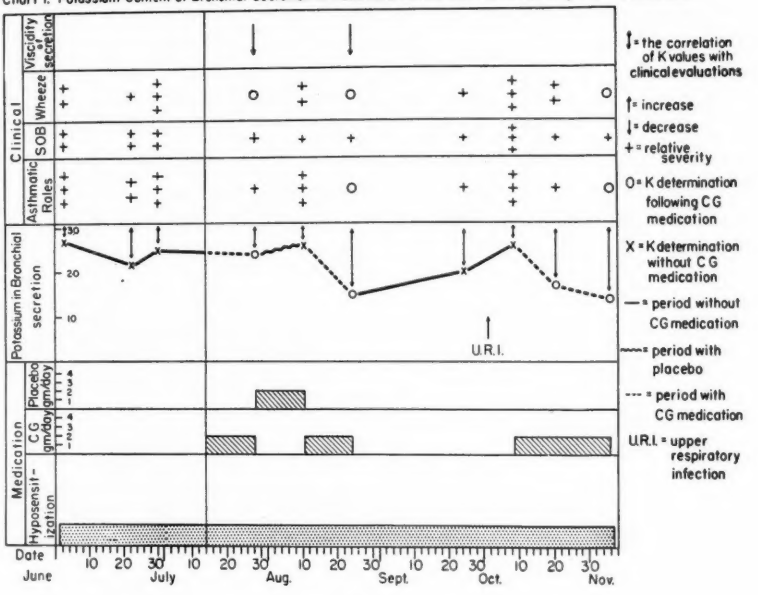

Chart 1.

was treated for almost three years with periods of remission and with periods of substituting placebo for calcium glutamate. It was interesting to notice that she presented two types of rales, one related to her bronchiectasis, which was subcrepitant in nature and present in both apices, and another, typical of an asthma patient. After administration of calcium glutamate, the asthmatic type rales disappeared, but the subcrepitant and coarse rales of bronchiectasis persisted. Whenever an upper respiratory infection developed, there was an aggravation of her general chest abnormalities. This patient, who had been markedly disabled for over ten years of her life, felt that calcium glutamate resulted in the most marked improvement of any of the medications she had ever had.

Case 5.—A white man, aged thirty-five, whose potassium values are presented in Chart 1, had bronchial asthma, and was found sensitive to house dust, respiratory organisms, tobacco, and ragweed. Clinical evaluation was done for a period of about one year prior to the chemical determination of potassium in his bronchial secretions. During that time he noted definite improvement following calcium glutamate therapy and additional improvement when calcium glutamate and potassium chloride were given together. In this patient, symptomatic improvement occurred within two weeks of the administration of the drug. He has been followed for two and one-half years and has noted continued improvement with calcium glutamate therapy. There are many remissions present now and he may go for several months without further administration of calcium glutamate. However, during

episodes of exposures to his allergens he gets periodic flare-ups in his asthma which requires more vigorous therapy of the acute type. His vital capacity increased from 3000 cc to 3500 cc, his normal being 4200 cc.

Chart 2· Potassium Content of Bronchial Secretion in Patient No. 6 as Affected by Calcium Glutamate*

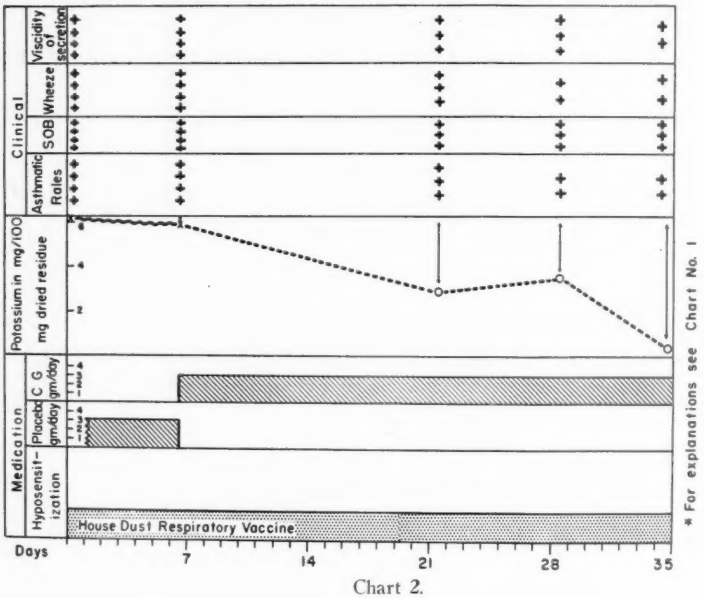

Chart 2.

Case 6.—This patient was treated for a relatively short time. He was a white man, sixty-five years old, in extreme distress due to bronchiectasis, asthma, emphysema and pulmonary fibrosis. He was a very heavy smoker, smoking up to three or four packages of cigarettes a day. On physical examination he had coarse bubbling rales at both bases and wheezing and squeaking throughout both lungs. There was tightness in his chest, prolonged difficult expirations and markedly restricted exercise tolerance. His clinical course was studied in conjunction with analysis of his bronchial secretion. He showed simultaneous improvement clinically as his potassium level in the bronchial secretion was significantly reduced by the use of calcium glutamate. This elderly white male showed definite improvement in his symptoms associated with a striking decrease in the potassium value of his bronchial secretion while on 3 gm of calcium glutamate per day (Chart 2).

Case 7.—A white man, aged fifty-two, had a recent onset of asthma approximately five months before the onset of therapy with calcium glutamate. He was sensitive to house dust and respiratory organisms. During the five months of his asthma he was treated with many varied types of treatment including hyposensitization and symptomatic measures. All his therapy was rather unsatisfactory. He was constantly short of breath, coughed, wheezed and was always uncomfortable. During the control period of observation, during which time his potassium content of bronchial secretion was being determined, he was exposed to a forest fire episode (Chart 3), and a bronchial secretion obtained within five days of this exposure revealed a tremendously high increase in his potassium value associated with a marked aggra-

vation of his clinical symptoms. He was treated with calcium glutamate and responded quite well, noticing a definite clinical improvement as his potassium values in bronchial secretions decreased. His improvement was well maintained even after

Chart 3. Potassium Content of Bronchial Secretion of Patient No. 7 as Affected by Calcium Glutamate*

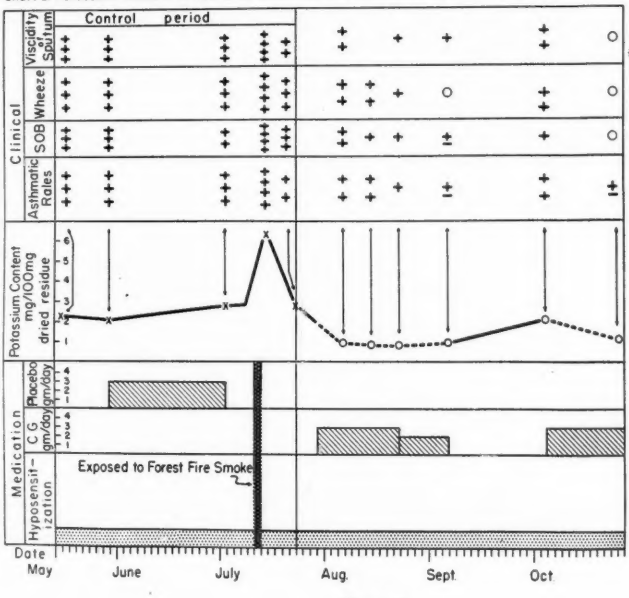

Chart 3.

calcium glutamate was stopped until he was exposed to coal gas in an old dusty house, which resulted in a flare-up of the asthma. However, this attack subsided much more quickly than any of his previous attacks. It was interesting to note that at one time he developed an acute bursitis in his left shoulder which was very disabling and required the administration of cortisone. Coincident with improvement in his shoulder, his asthma also showed improvement, but his chest still revealed the asthmatic type rales and he still reacted to dust and fumes as he had before. Comparing the effectiveness of the cortisone and the calcium glutamate in this patient, there was no objective clinical improvement which could be attributed to the cortisone which was not noted with calcium glutamate administration. This patient's bronchial potassium values are tabulated in Chart 3.

Case 8.—A white woman, aged thirty-six, had asthma of long standing, originating in childhood and apparently due to feathers, dust and respiratory organisms. The bronchial potassium values of her secretion are shown in Chart 4. This patient failed to respond satisfactorily to hyposensitization nor did she respond to cortisone therapy, however, she showed definite improvement following calcium glutamate administration. She was also treated with placebo and other symptomatic measures, but responded primarily and most effectively to calcium glutamate. Addition of potassium chloride to her calcium glutamate seemed to increase the efficacy of the calcium glutamate. This patient has been followed for three years at periodic intervals and her improvement has been maintained. At no time were there any untoward or toxic clinical manifestations due to calcium glutamate in this patient.

Case 9.—A white woman, aged fifty-five years old, with infectious asthma of eight years' duration, showed definite improvement with calcium glutamate during the first month of therapy. She then developed a severe respiratory infection, sore

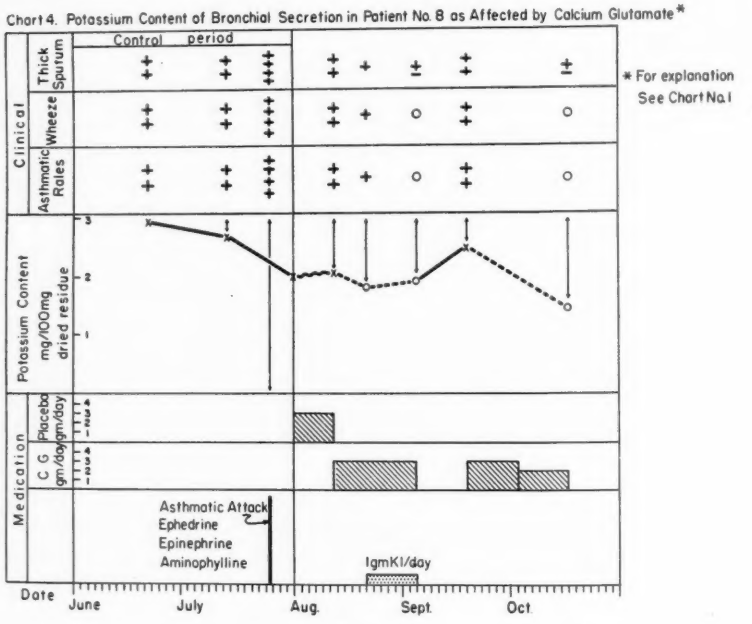

Chart 4.

throat, and fever, during which time terramycin was used and the condition improved; however, a dry tickling cough persisted. She left for Florida for one month and felt fine while there, but one day after her return her symptoms recurred. She failed to respond to placebo and sneezing developed. She was placed on Chlor-Trimeton and calcium glutamate 3 gm daily. There was no relief from the Chlor-Trimeton. She complained of dyspnea on exertion and tightness in the chest, became depressed and stopped all medication. She became emotionally agitated and was having difficulties at home with her daughter and grandchildren, and finally moved to Florida where further observation was no longer possible. This patient obtained only temporary relief.

Case 10.—An obese white man, aged seventy-four, had bronchiectasis, emphysema and superimposed asthma. He took calcium glutamate in 3 gm doses per day, but failed to lose weight because of his culinary orgies. In the presence of far advanced irreversible changes in the lungs, plus overeating and short stature, his clinical response was far from good. He did admit to some decrease in cough and expectoration and some increase in his exercise tolerance; however, lack of co-operation made continued therapy and observation impossible.

DISCUSSION

Observations were made on the therapeutic effects of calcium glutamate on a group of carefully supervised patients with asthma of the infectious or allergic type for a period of upwards of three years.

Although the use of calcium glutamate is not intended as replacement for other specific antiasthmatic therapy, it has caused definite improvement in most cases where the latter had been ineffective. It apparently has no effect on bronchospasm and mucosal edema, which also require correction in the alleviation of the asthmatic syndrome.

An interpretation of the effect of calcium glutamate upon the allergic bronchial secretion may necessitate the consideration of the following questions. Some of the physiologic disturbances associated with asthma are described in the introduction. These disturbances result, no doubt, from one or more injuries. Injury to the bronchial mucous membrane or glands, whether by infection, edema, antigen-antibody interaction, histamine or like substances, or irritants, such as smoke or chemicals, cause derangements in the metabolism and changes in the permeability of the affected cells. Under these conditions the cells of the mucous membrane can lose potassium and other substances of unknown nature into the tracheobronchial tree whereby an increase in the potassium of bronchial secretions can be expected. According to this interpretation, the higher the potassium value in the bronchial secretions, the greater the disturbance in the cellular metabolism of the tracheobronchial tree. An increase in asthmatic rales would be expected clinically in association with these changes.

In many cases, the asthmatic type of allergy is believed to be due to an interaction between allergenic antigen and antibody, causing a mild, anaphylactic type of tissue reaction. Schittenhelm et al[2,a,b] reported a several-fold increase in the potassium content of blood immediately after the manifestation of anaphylactic reaction. Also high plasma potassium values have been reported by Fenn[3] in various allergies and bronchial asthma. According to Thaler[4], the injection of histamine causes an increase in plasma potassium. In anaphylactic reactions, liberation of histamine or like substances is believed to be involved. As reported here, we have observed that asthmatic bronchial fluids contained potassium in concentrations markedly higher than in nonasthmatic samples. Besredka[5] and Kastle et al[6] reported that calcium administration prevented experimental anaphylactic reaction. On this basis, it may be suggested that calcium would antagonize the loss of potassium from the cell. Also, calcium appears to play a part in decreasing the permeability of the cell membrane and the irritability of cells in general[7], thus indicating the possibility of decreased potassium loss from the cell. According to Krebs and Eggleston[8], glutamate and glucose decreased the potassium loss from tissues.

Clinically, therefore, the addition of potassium to calcium glutamate should show additional beneficial effects in correcting one of the underlying abnormalities in bronchial asthma and replenishing the cell with potassium.

In this connection it may also be mentioned that some drugs which have been reported to be partially effective in the treatment of asthma have also had an effect on the transfer of potassium from the extracellular to the intracellular compartment. In this regard, the effects of epinephrine (Brewer et al[9]), Benadryl® (Sezai[10]), and intravenous glucose and insulin (Kolff[11] and Kamminga et al[12]) can be cited.

The results reported here seem to bear upon the above considerations.

SUMMARY

A group of asthmatic patients were treated with calcium glutamate and the following effects were observed. Calcium glutamate in most instances reduced the volume of mucus expectorated and decreased excessive viscidity. Simultaneously, the potassium in the bronchial secretions was reduced. There was clinical decrease of asthmatic type rales. A placebo did not influence the patient's symptoms or findings, nor did it influence the potassium value of the bronchial secretion. Withdrawal of calcium glutamate and continuing the symptomatic treatment usually resulted in a prompt aggravation of the symptoms in these patients. Resumption of calcium glutamate produced a gradual clinical improvement. Following its withdrawal, recurrence of symptoms was observed after one week in some cases and several months in others.

There were no untoward side effects caused by calcium glutamate, nor evidence of toxicity of any kind, even where the medication was continued over a two-year period in doses averaging 3 gm per day. Considerably higher doses had been administered for weeks without gastric upset.

The vital capacity showed an increase of about 20 per cent following calcium glutamate administration. This was manifiested clinically by an increase in exercise tolerance. Some patients whose limit of walking tolerance was half a block developed the ability to walk up to five to six blocks. In view of the advanced state of their disease, the observed increase in vital capacity and exercise tolerance is of interest. It appears that calcium glutamate, sometimes together with potassium chloride, has some definite effect on the bronchial secretion of the asthmatic patient. The potassium content of the bronchial secretion in this respect appear to assume considerable importance. The theoretic basis of the plan of study is discussed and the possible bearing of the theory on the present findings is pointed out.

ACKNOWLEDGMENT

We are indebted to the Research Laboratories of the National Drug Company for their supply of calcium glutamate and placebo and for the financial aid in defraying the laboratory expenses.

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Submitted July 11, 1956

SIXTH INTERNATIONAL CONGRESS OF OTOLARYNGOLOGY

The Sixth International Congress of Otolaryngology will meet at Washington, D. C., May 5-10, 1957. The scientific program for the Plenary Sessions is as follows: "Chronic Suppuration of the Temporal Bone," presented by Marcus Diamant, Halmstad, Sweden; Luzius Ruedi, Zurich, Switzerland; and Horst Wullstein, Wurzburg, Germany; "Collagen Disorders of the Respiratory Tract," under the leadership of Hans Selye, Montreal, Canada; Michele Arslan, Padua, Italy; and Leslie Gay, Baltimore, Maryland; and "Papilloma of the Larynx" directed by Jo Ono, Tokyo, Japan; Plinio de Mattos Barretto, Sao Paulo, Brazil; and F. C. W. Capps, London, England.

Anyone wishing to present a paper should submit it before the deadline, October 1, 1956. Applications to present motion picture films should also be sent before October 1, 1956. Those planning to attend the Congress who have not yet registered should do so immediately, in order to obtain hotel registration priority.

For detailed information pertaining to the Congress, please communicate with the Secretary General, 700 North Michigan Avenue, Chicago 11, Illinois.

CONTROLLED STUDIES OF AN ORGANIC IODIDE IN BRONCHIAL ASTHMA

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TRIODE®* is an organic iodide which is chemically a triodide of beta-amylose and has an action similar to inorganic iodides. Our preliminary studies of this substance have been reported (Ogden et al: Triode in bronchial asthma. Ann. Allergy, 10:759, 1952). In the present study, it was compared subjectively with a placebo and a saturated solution of NaI. Evaluation of the findings indicated that it was a well tolerated, effective expectorant which lessened the degree of asthma; no toxic or allergic manifestations were observed. Because it was realized that subjective evaluation may often be faulty, two controlled studies were planned. In the first part of this new study very small doses of Triode® were compared with a placebo, while in the second part larger doses were used.

METHOD OF STUDY

In seventeen patients the results obtained using 60 to 80 mg of this preparation (10 to 13 mg of combined iodine) daily in divided doses were compared with those using a similarly appearing placebo. The two preparations were alternated at intervals of approximately one month. In the second study, fifteen patients received 960 mg of the drug daily (160 mg of combined iodine), and again it was compared with a placebo and alternated at two or four week intervals.

In both studies one half of the patients were always on the drug while the other half were on the placebo. This, therefore, would neutralize such factors as weather and pollen counts. Since the time of observation varied for each patient, as well as the period while on placebo and while on the iodide, data are expressed as averages per week of observation. The average hours of severe, moderate, mild and total symptoms, hours of sleep and quantity of sputum were recorded for both groups. Detailed data for each patient for Part I are given in Table I; the results obtained in Part II are given in Table II.

A careful study of these tables shows that there is a great variation between patients. Because the same patients were used for treatment with the drug and placebo, analysis must be made by comparing the reactions of the same patient under the two regimes. For this comparison the

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*Supplied by Thomas Jordan, Inc., New Orleans, Louisiana.

TABLE I. LOW DOSAGE STUDY

	Triode							Placebo						
	Weeks	Mild	Moderate	Severe	Total	Sleep	Sputum	Weeks	Mild	Moderate	Severe	Total	Sleep	Sputum
R.R.	14	7	6	6	18	44	130	25	9	6	3	17	46	95
E.B.	14	5	1	0	6	54	41	13	3	0	4	7	54	52
E.S.	17	5	10	4	19	48	0	20	6	8	32	45	40	8
A.C.	27	24	0	0	24	45	146	10	35	8	0	43	46	169
C.H.	15	10	7	3	20	49	56	13	12	11	0	22	52	79
W.E.	10	3	3	0	7	62	7	8	0	2	0	2	68	20
D.S.	8	0	0	0	0	45	0	9	4	1	1	6	40	16
E.H.	11	0	2	0	2	45	12	6	2	0	0	2	46	3
F.J.	7	0	0	3	3	46	11	5	0	0	1	1	45	12
S.T.	7	2	1	0	3	51	12	4	2	0	1	3	49	11
U.W.	18	5	1	7	11	56	68	10	0	3	0	3	62	41
N. deG.	11	5	7	0	13	49	7	8	3	11	0	13	48	4
J.O.	6	22	30	8	61	26	131	13	8	29	23	60	23	114
M.B.	9	19	4	0	23	67	0	10	24	0	0	24	62	0
O.D.	4	1	0	0	1	31	0	6	0	0	0	0	35	0
I.W.	3	7	0	5	12	59	217	2	0	16	7	24	31	0
W.F.	5	16	0	12	28	35	173	2	10	0	18	28	31	0
Average for all patients/week	10.9*	7.7	4.2	2.8	14.7	48	60	9.1*	6.9	5.6	5.1	17.6	46	37

All figures given represent average hours per week except those for sputum, which represent average cubic centimeters per week.
*Average number of weeks patients were on medication.

TABLE II. HIGH DOSAGE STUDY

	Triode							Placebo						
	Weeks	Mild	Moderate	Severe	Total	Sleep	Sputum	Weeks	Mild	Moderate	Severe	Total	Sleep	Sputum
E.B.	12	9	4	10	23	46	0	13	4	4	12	20	40	0
H.H.	9	3	0	0	3	56	8	15	3	0	3	6	56	7
D.O.	8	0	4	0	4	62	21	4	0	8	1	9	56	0
R.L.	9	2	0	0	2	68	10	11	13	1	0	14	69	23
M.R.	10	8	21	1	30	48	494	12	5	18	7	30	51	440
G.P.	5	19	31	23	73	35	27	4	30	36	18	84	31	16
E.S.	7	10	0	0	10	50	10	6	10	0	0	10	45	0
E.M.	10	1	4	4	9	56	35	11	5	0	0	5	56	31
A.P.	6	0	2	4	6	56	19	7	0	1	0	1	60	22
C.J.	11	1	2	4	7	50	62	9	1	2	6	9	49	34
I.D.	11	0	0	0	0	69	15	8	2	1	7	10	68	134
C.G.	7	0	3	6	9	69	49	13	3	1	3	7	73	44
M.G.	6	1	2	0	3	64	0	9	0	20	0	20	67	0
A.B.	4	6	14	6	26	65	139	4	0	21	0	21	67	211
O.J.	4	6	8	22	36	54	125	4	1	10	19	30	53	158
Average for all patients/week	7.9*	4.5	6.3	5.3	16.1	57	68	8.7*	5.1	8.2	5.1	18.4	56	75

All figures given represent average hours per week except those for sputum, which represent average cubic centimeters per week.
*Average number of weeks patients were on medication.

differences between results while on placebo have been subtracted from those while on the iodide. Averages for all patients for both parts of the study are given in Table III. It should be noted that a minus difference for symptoms means better results with the drug, while a plus difference for sleep and sputum indicates better results while on iodide therapy.

Since severity of symptoms were evaluated purely from a subjective standpoint, hours of total symptoms would be of greater meaning.

TABLE III. DIFFERENCE IN AVERAGE HOURS PER WEEK OF SYMPTOMS AND FINDINGS REPORTED WHILE ON TRIODE AND PLACEBO. AVERAGE FOR ALL PATIENTS (TRIODE MINUS PLACEBO)*.

	Part 1 (17 pts.)	Part 2 (15 pts.)
Asthma		
Mild	+0.8 hrs.	−0.6 hrs.
Moderate	−1.4 hrs.	−1.9 hrs.
Severe	−2.3 hrs.	+0.2 hrs.
Total	−2.9 hrs.	−2.3 hrs.
Sputum	+22.8 cc	−7.1 cc
Sleep	+2.0 hrs.	+0.5 hrs.

*Minus findings on hours of asthma, and plus findings on sputum and sleep favor Triode.

DISCUSSION

Examination of Table III shows divergence in results between the two studies. Considering total hours of symptoms, both studies favored the iodide expectorant. On the other hand, it should be noted that results in mild and severe symptoms differed in the two studies, but moderate symptoms favored the drug in both. In both studies there were slightly more hours of sleep while on iodide therapy. Patients in the first study definitely reported more sputum when using the iodide expectorant; however, this was not substantiated in the second study. Because of the great variation in patient response and the small number of patients involved, none of the differences noted in Table III are statistically significant.*

The small differences noted in most cases may be due to the fact that Triode,® like other iodides, does not have a sharp pharmacologic end point. It is also recognized that psychologic factors are of importance in asthmatic patients. For this reason in a controlled study of this type where the drug and placebo are regularly alternated, good results obtained on the drug may also be reported while on the placebo in a person who might otherwise be reporting symptoms. Therefore it is possible that if the drug and placebo were separately given to two large groups of patients the statistical data obtained might conceivably be more clearcut.

SUMMARY

1. In a previous study, a subjective evaluation of Triode® indicated that this compound is an effective drug in bronchial asthma. It was well tolerated and no side reactions were observed.

2. A low dosage controlled study showed some difference in favor of the drug treated group from the standpoint of moderate, severe, and total hours of asthma, as well as quantity of sputum and hours of sleep. However, there were more hours of mild asthma while on drug therapy.

*These data were tested by Dr. Huldah Bancroft, Professor of Biostatistics, Tulane University, School of Medicine.

3. In a larger dose controlled study there was again some difference in favor of the patients receiving the iodide preparation with respect to mild and moderate symptoms and total hours of asthma. The quantity of sputum produced while on the expectorant decreased.

4. While statistical evaluation did not show that the results were significant, it must be remembered that in a study of this type benefits that are obtained with the drug may be carried over to the period when the placebo is given.

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Submitted May 24, 1956

EUROPEAN ACADEMY OF ALLERGY

During the Third European Congress of Allergy, held in Florence, Italy, in 1956, the delegates of the societies of allergy and of those countries without a society for allergy came together in two meetings. The European Academy of Allergy, aiming toward European cooperation in the field of allergy (education, meetings, research), was established. Officers elected are: President, Professor U. Serafini, Institute di Patologia Medicviale Morgagni, Firenze, Italy; vice presidents: Dr. Bruun, Dr. Farrerons-Co, and Dr. Williams; and secretary, Dr. Quarles Van Ufford, Emmalaan, 17 Utrecht (Netherland).

Members of the Advisory Committee are Professor Eriksson Lihr, Dr. Halpern (President-Elect, I.A.A.), Professor Hansen, Professor Jimenez Diaz, Professor Lunedei, Professor Pasteur Vallery-Radot, and Professor Soujitch.

Honorary Members are Sir Henry Dale and Professor C. Frugoni.

The official languages are English, French and German. The Official Journal is "Acta Allergologica."

The Fourth European Congress will be held in England in 1959.

ECZEMA OF THE EYELIDS

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THE management of eyelid eczema, at best, presents problems. Many of these difficulties are, however, avoidable, and may be attributed to the unfortunate present-day tendency of considering the dermatitis as being due to contact allergy and not recognizing that other conditions, either alone or in combination, may present a superficially similar clinical appearance. Indeed, so strong is our current orientation towards allergy that the importance of some of these other entities has, with few exceptions,[15,17,18] apparently been forgotten, or overlooked. Actually, the major causes of eyelid eczema encountered are: (1) allergic eczematous dermatitis, due to contact allergy; (2) bacterial or fungal eczematoid dermatitis, mostly from infection of the lid margins with pathogenic staphylococci; and (3) certain generalized dermatoses such as atopic dermatitis, neurodermatitis, seborrheic dermatitis and psoriasis, in which eczematized lesions occur primarily on the eyelids but where careful search will reveal diagnostic lesions elsewhere. In each instance, the treatment is entirely different and incorrect therapy based on the wrong diagnosis not only will yield no benefit, but, at times may result in serious aggravation of the original dermatitis. The differentiation of these entities, however, is often not a simple one. It requires complete study of the patient, including a thorough history and general physical examination, with special reference to skin lesions elsewhere, and even more important, a careful evaluation of the external eye, including bacterial cultures and epithelial scrapings when indicated.

ALLERGIC ECZEMATOUS DERMATITIS

The most common cause of acute eczema of the eyelids is contact allergy. This usually follows the use of cosmetics or ophthalmic drugs. Allergy to plants is, however, not uncommon. Less often, articles of apparel, jewelry, metals, plastics, other chemicals, and animal and vegetable products too numerous to mention may cause the reaction. The dermatitis, which may be either unilateral or bilateral, occurs mostly in women, probably more because they use cosmetics so universally than because of any endocrine factor. There need be no previous history of familial or personal allergy. The diagnosis is based on a careful history, positive patch test, and the ruling out of other major causes of eyelid eczema, namely, primary ocular infection or generalized dermatoses. In addition, one must be certain

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Presented by invitation at the Twelfth Annual Meeting of The American College of Allergists, April 18, 1956, New York, New York.

that the contact dermatitis present is due to allergy rather than to primary irritation. The highlight of therapy is to eliminate the sensitizing agent; the use of any other allergenic substance may aggravate the condition seriously.

It is difficult to be certain of the relative importance of the various contactants causing allergic eczematous dermatitis. Most of the literature consists of isolated case reports. These, while both interesting and valuable, shed little light on this aspect; worse than that, they tend to overemphasize the more bizarre and rarer causes. There are, however, a few reports available in which large enough series of patients suffering from ocular eczema have been studied to permit the authors to draw certain conclusions both in regard to the causation of the condition and methods of diagnosis. While many of these do list cosmetics as the main offender, they do so with varying emphasis, due to the fact that they represent studies on different types of people from different countries, whose habits and occupations are reflected in their allergic propensities. Another factor that limits the value of any statistical report is that the specialist who is interested in this problem is today only likely to encounter the deep-seated problem case, not the common, garden variety. The usual offenders are immediately thought of by the family physician, or even the beautician, and, generally, successfully eliminated. Some years ago fingernail polish was certainly the most important cosmetic sensitizer. At the present time, because everyone has been alerted to its importance, allergy to it is suspected right away. Still another source for conflicting statistical conclusions lies in the fact that specialists in different fields encounter different causes for the allergic reaction. It is only natural for the ophthalmologist to see more allergy from the drugs he prescribes than other types of specialists.

For example, the studies of Hazen[6] and of Swinny[14] demonstrate the overriding importance of cosmetic allergy in those cases of ocular eczema encounted by American allergists. Kaalund-Jorgensen[9] of Denmark, on the other hand, found that it was responsible for the difficulties of only twenty-one of the seventy-three women in his series, and that allergy to potted plants accounted for thirteen cases. No instance of nail polish allergy occurred, because Danish women do not use it routinely. In Egypt, a basically ophthalmologic study by El Mofty and El-Gammal[1] indicated that, in their experience, locally applied drugs caused more than half the eczemas, while cosmetics were responsible for only one-quarter. Similar ophthalmologic findings were reported by Jirasek and Schwank[8] from Central Europe. By far the largest statistical study has only recently been published by Sidi and Mawas[13] from the Rothschild Ophthalmological Foundation in Paris. They found that of 312 patients with contact allergy of the eyelids about 50 per cent were due to ophthalmic drugs and about 30 per cent to cosmetics. The papers of these authors are especially recommended for those interested in this field.

Eczema of the Eyelids Due to Ophthalmic Drugs.—Allergy to ophthalmic drugs is a common occurrence and may cause exceedingly serious reactions. As just observed, in ophthalmic practice it is the most common cause of eyelid eczema. Since the conjunctiva is usually the focal point of contact, the allergic reaction generally begins as a conjunctivitis, soon spreading to the adjacent skin as a typical allergic dermatoconjunctivitis.[19] The characteristics of this classic form of inflammation, in the order of their appearance, are: itching of the eyes, papillary conjunctivitis, eczema of the skin of the eyelids, and conjunctival eosinophilia. The earliest signs of eczema due to eye drops may be at the canthi and lower lids; with ointments, the lid margin is first involved. Although any ophthalmic drug may cause allergy in susceptible individuals, allergic dermatoconjunctivitis is usually encountered following the use of anesthetics, antibiotics, sulfonamides, mydriatic alkaloids, and mercurials. Drugs and chemicals with para-linkages in their molecular structure are, of course, especially allergenic. Even if the active ingredient in an ophthalmic preparation is guiltless, allergy may result from the ophthalmic vehicle used, especially ointment bases and preservatives in the vehicle. Now that it is required by law that commercial ophthalmic solutions be prepared sterile and contain suitable preservatives,[20] such allergy is assuming greater importance.

Drug intolerance sometimes may be the result of drug irritation rather than drug allergy. Ocular irritation is differentiated from allergy in that a nonspecific inflammation, often follicular, results without the occurrence of eczema or eosinophilia. This usually is due to the prolonged use of the miotic alkaloids and related synthetic products such as eserine, pilocarpine, neostigmine, mecholyl and diisopropylfluorophosphate, all of which are prone to deteriorate, forming irritating end products.[16] Such drug irritation can be avoided by using properly prepared solutions of the same drug, while drug allergy requires substitution of a different drug. It is therefore of great importance to make the distinction between these two types of drug intolerance. Eyelid eczema may also on rare occasions occur following the systemic use of drugs.

Eczema of the Eyelids Due to Cosmetics.—The importance of cosmetics as a cause of eyelid eczema is, of course, great. Actually, however, if we consider how universally they are used, the percentage incidence of cosmetic allergy is extremely low, much less than to drugs. On balance, cosmetics would appear to do much more good than harm.

Unlike drug allergy, cosmetic allergy usually begins by involvement of the upper lid especially at the medial portion. Generally the conjunctiva is uninflamed and without eosinophilia. In the diagnosis of eyelid eczema due to cosmetics, it must be remembered that only the eyelids may react even if the allergenic substance was applied at a place remote to them.

Thus, although a facial cream or hair tonic is not directly applied to

the eyelids, the eyelids may eventually prove to be the only site of the eczema, as even a minimal amount of the substance, indirectly contacted by means of a pillowcase during sleep or the fingers, is able here to penetrate sufficiently to cause the reaction, in contrast to its inability to penetrate the thicker and stronger skin where it was originally applied more generously. Careful history taking is essential; the use of leading questions often is important in opening avenues of thought otherwise dismissed by the patient as immaterial. Just because a cosmetic has been used previously without reaction for a long period of time, it should not be completely exonerated, because the manufacturer only now may have changed the formula or the method of production in some way. In diagnostic testing for cosmetic sensitivity it is better to apply the cosmetic in the way it is generally used instead of doing a patch test, because in normal use the uncovered cosmetic loses most of its substance by evaporation.[12] Covering the cosmetic by a patch does not permit this evaporation and may give rise to false positive reactions with cosmetics that are actually harmless when used in the ordinary manner.

Today most allergies to cosmetics are due to the perfumes used and to impurities in manufacture, as the hitherto most flagrant offenders have been eliminated. Sometimes, while the cosmetic itself is innocent, contamination of the containers may cause allergies.

Treatment of Eczema of the Eyelids Due to Contact Allergy.—The basic principles in the treatment of contact allergy are the elimination of the offending substance if it has been identified, or of all possible offenders if no definite cause has been established, and the avoidance of any new medicament that may aggravate the condition. Rather than incite an already hyperergic skin, which now may react allergically to medicaments it can tolerate at other times, it is preferable to use little or no local therapy. The safest procedure is the systemic use of steroids such as corticotropin, cortisone, or hydrocortisone, which are very valuable in severe reactions. Since they need only be given for several days they are thus rarely contraindicated. The local use of hydrocortisone or cortisone is often effective, but it should be emphasized that sometimes allergies to even these preparations may occur. Antihistaminics in any form do not appear to be effective in contact allergy and indeed are potent sensitizers when used locally. When drug allergy occurs, it is sometimes necessary to continue the use of another drug having a similar pharmacologic action. The drug chosen for this purpose should differ as much as possible in its chemical structure from the original excitant. Should no drug be available for substitution in the place of the original offender and it must be used, the concomitant systemic administration of sufficiently large amounts of steroids, preferably ACTH, is advised. Generally, the local use of these steroids will not suffice to prevent the allergic reactions.

Hypoallergic cosmetic preparations are now available for those persons suffering from allergies to cosmetics. Even if these should prove to be sensitizers, special formulae may be obtained for such individuals from the manufacturers.

INFECTIOUS ECZEMATOID DERMATITIS OF THE EYELIDS

The concept that local infections by bacteria could cause eczema was not a new one at the time the apt, if unwieldy, term "infectious eczematoid dermatitis" was given to the entity by Engman in 1902.[2] However, while others, before and after, did stress the role of bacterial infection in its causation, only recently has the importance of either primary or secondary bacterial infection, especially staphylococcal, in the production and perpetuation of eczema, become generally accepted. Eczema of the eyelids not infrequently develops in the course of bacterial infection of the ocular adnexae. Such reactions are almost always staphylococcal, but sometimes may be due to streptococci. It may also occur, on rare occasions, as a result of fungal infection.

Staphylococcal Eczema of the Eyelids.—As noted previously, the importance of staphylococcal infections of the lid margin and conjunctiva as a major cause of eczema of the eyelids has not received the emphasis it deserves. While dermatitis actually is a relatively infrequent complication of such common infections, recent experience indicates that the condition is the most frequent cause of chronic eyelid eczema encountered; yet, because its importance is not generally appreciated, it is often overlooked.

The simpler term "staphylococcal eczema" is preferable to the rather redundant and awkward "infectious eczematoid staphylococcal dermatitis" which has been used hitherto to describe dermatitis occurring from superficial staphylococcal infection. Whether the infection is secondary to other skin pathology, as may occur in the hand, or is primary, as generally seems to be the case around the eyes, is relatively unimportant from the therapeutic viewpoint; in either event, specific antibacterial treatment in all its forms is indicated, in contrast to the nonspecific symptomatic therapy used for other types of eczema. Proper diagnosis is therefore of the utmost importance, as such aggressive treatment wrongly applied to the hypersensitive skin of contact allergy, or to the acute manifestations of other dermatoses, will aggravate them immeasurably. The bland regime indicated in nonbacterial eczemas, on the other hand, if wrongly used in the infectious cases, merely serves to provide a better climate for the bacterial process.

Many unrecognized, recurrent cases of staphyloccal eczema of the eyelids are treated unsuccessfully for years as instances of contact allergy. One cannot distinguish between the two conditions on the basis of the character of the dermatitis, as they look very much alike. What is required

for the diagnosis and successful treatment of staphyloccal eczema is the demonstration that the focal point of the process is not the skin, but instead, is the eye and its adnexae. When this is demonstrated and proper treatment instituted, the eczema, which is, a secondary complication, gradually disappears. The key to the diagnosis is routine detailed ophthalmologic examination, both clinical and bacterial. This almost always will reveal the basis for the dermatitis, even if the primary focus is obscure, such as a minute abscess of a meibomian gland. The following findings differentiate staphylococcal eczema of the eyelids from the allergic variety: (1) blepharitis, with scaling and, often, ulcers of the eyelid margin; (2) meibomitis, either diffuse or focal; (3) superficial epithelial keratitis involving the inferior half of the cornea, readily seen on slit-lamp examination after staining with fluorescein, considered as pathognomonic of staphylococcal conjunctivitis; (4) strongly positive conjunctival and lid margin cultures, showing many toxin-producing staphylococci, often entirely out of proportion, numerically, to the objective clinical findings; and (5) absence of eosinophils in epithelial scrapings, which instead usually reveal neutrophils and staphylococci, especially on the lid margins.

It should be emphasized that cultures of the lid margin and conjunctiva which are positive for pathogens are not a normal occurrence and serve to confirm the clinical findings, in patients suffering from staphylococcal dermatitis, that the primary trouble is ocular, not dermatologic. In this regard they are more significant than cultures of the involved eczematoid skin, because pathogenic staphylococci, which often are found on normal skin, are especially common in all types of eczema.

The occurrence of staphylococcal eczema appears to require a special basic diathesis or set of circumstances. The dermatitis is found almost predominantly in middle-aged women, often postmenopausal. These patients, in the main, have very sensitive skins, exhibiting a marked tendency to develop multiple drug allergies. Diminished lacrimation or even frank keratoconjunctivitis sicca may be present. The occurrence of mild hypothyroidism and, especially, a seborrheic diathesis, both with dry skins, appears to be more than coincidental. An interesting phenomenon is the presence of verrucous lesions which become prominent in these patients. It would appear that these factors, in addition to irritation from cosmetics, may predispose such patients, in the absence of atopy, to hypersensitivity or heightened susceptibility to bacterial products.

Until recently, the truly vast importance of the staphylococcus was not appreciated because investigators failed to distinguish pathogenic toxin-producing strains from common, harmless varieties occurring on the normal conjunctiva, eyelids and skin. The potency of these staphylococcal toxins is today well recognized, and their role in external ocular disease is now accepted.

A dual mechanism appears to be responsible for the production of staphylococcal eczema. The first of these appears to be the direct toxic

action of the dermonecrotizing, thermolabile and filtrable exotoxin of the staphylococcus. The second mechanism seems to be allergy to staphylococcal products, including staphylococcal exotoxins, endotoxins, and possibly staphylococcal protein itself. There appears to be no question that such allergy is common and may at times reach severe proportions. For further ramifications of this subject the reader is referred to previous papers.[15,17,18]

The significance of positive reactions to intradermal injections of staphylococcus toxin or toxoid has not been universally accepted because so many persons, having been exposed to the staphylococcus at some time in their lives, exhibit a certain degree of sensitivity. However, recent investigations support clinical observation that marked reactions are of diagnostic value. Gernez and Pannequin,[4] for example, feel that intradermal injections of toxin cause two phenomena, one toxic, the other allergic. The toxic reaction, being reciprocally dependent on the blood antitoxin titer provides an index of immunity to staphylococcus infection; the allergic reaction, which is of shorter duration, is uninfluenced by antitoxin and may be elicited by dilute toxin, heated toxin, or toxoid. The intradermal reaction to dilute toxoid offers, within limits, an index of allergy to staphylococcal proteins and to other staphylococcal products. While minor reactions to the injection of dilute toxoid or vaccine may be of questionable value, it would appear therefore that marked reactions are diagnostically significant of allergy. An allergic correlation of positive toxoid reactions with past or present staphylococcal infections has been found by Wagner and Maly.[21]

Treatment of Staphylococcal Eczema.—The basis for treatment is the usual one for staphylococcal infections: (1) the use of antibacterial agents, and (2) injections of toxoid and vaccines when indicated. Needless to say, such aggressive treatment wrongly applied to eczemas of nonbacterial origin will aggravate them immeasurably. The patient may be conditioned by an unusually sensitive skin, so that allergies to antibiotics, sulfonamides, antiseptics and ointment bases are particularly common. Systemic antibiotics or sulfonamides, if tolerated, may be tried, but are not especially effective. Their local use is preferable. Milder agents such as sodium propionate are safe and often valuable. Hydrocortone ointment is often very helpful but does not clear the underlying infection. Topical application of silver nitrate still seems to be the best single therapeutic measure.

Toxoid and vaccines are reserved for the more resistant cases. Both products are indicated not only because antibody titers are increased, but also because their use embodies a form of desensitization therapy. The best therapeutic results of vaccination often occur in individuals with the most marked initial reactions. Dosage should be very low in these cases at the start, and increased cautiously.

If clinical improvement is paralleled by negative conjunctival and lid margin cultures and reduced intradermal reactions, recurrences are unlikely. On the other hand, even if the eczema is controlled by local therapy, it may recur periodically as long as both the cultures and skin reactions are positive.

Eczematoid Dermatitis of the Eyelids due to Fungi.—These are encountered mainly as dermatophytids or monilids. While such allergic reactions due to fungi and their products are not uncommon elsewhere in the body, they appear to involve the eyelids only rarely, despite the frequency of dermatophytosis and moniliasis in this country. Foreign observers,[3,5] however, have stressed the importance of fungus allergy as causes of ocular eczema. No evidence of mycotic infection is found in the eczematoid eyelid skin, but is usually demonstrable at the often distant primary site of infection. When the original focus is successfully eliminated the eyelid eczema disappears, although cutaneous sensitivity to the specific fungus product remains. An interesting study of eczematoid monilid of the eyelids was published by Ruiz-Moreno.[11] Peck[10] has seen inguinal and eyelid eczema flare-up after tetracycline or penicillin therapy due to moniliasis engrafted on seborrhea.

ECZEMA OF THE EYELIDS IN GENERALIZED DERMATOSES

In certain generalized dermatoses, such as atopic dermatitis, neurodermatitis, psoriasis and especially seborrheic dermatitis, a nonspecific type of eczema of the eyelids may occur. The distinguishing feature of these cases is that, while the eyelid may appear to be the only area of skin involved and the eye itself may show changes, careful search, however, will reveal diagnostic skin lesions elsewhere. Treatment of this type of nonspecific eyelid eczema should be gentle and soothing, in order to alleviate the existing acute reaction.

Atopic Dermatitis and Neurodermatitis.—Atopic dermatitis is an extremely pruritic condition with a predilection for the eyelids, face, the sides and back of the neck, and both the antecubital and popliteal flexures, which occurs characteristically in the young. A familial history usually is obtained and other allergies such as hay fever and asthma are either present or develop later on. Multiple atopic sensitivities of the "immediate" type are demonstrable upon intracutaneous or scratch testing, yet the actual agents responsible for the eczema do not appear to be demonstrable by these intradermal wheal tests. Blood eosinophilia often occurs. The eczema is characterized by exacerbations and remissions over the course of years. In long standing cases cataracts occur. Keratoconjunctivitis has recently been described[7] as a further manifestation of atopic eczema, paralleling the skin activity of the disease and characterized by thickening and hyperemia of the conjunctiva with opacification and vas-

cularization of the cornea. Conjunctival eosinophilia is present. In these patients prompt improvement occurred with oral or topical cortisone therapy. Atopic eczema responds to systemic steroid therapy but recurs when treatment is stopped.

Neurodermatitis appears in adults often without atopy, and is usually related to one circumscribed area.

Seborrheic Dermatitis and Psoriasis.—Seborrheic dermatitis is a superficial scaling dermatitis of diffuse involvement rarely limited to the eyelids. Lesions occur typically in the scalp (dandruff), eyebrows, lid margins, behind the ears, on the sternum and axillae. Seborrheic blepharitis is characterized by greasy scales, which reveal numerous yeast (Pityrosporum ovale) on scrapings. An associated conjunctivitis may be present, but superficial epithelial keratitis only rarely occurs and is not likely to be confused with the staphylococcal variety. The dry skin of the eyelids of the seborrheic individual may serve as the predisposing factor in both allergic and infectious eczema.

Psoriasis favors the hair line of the scalp, elbows, knees and extensor surfaces of the extremities. The eyelids and face are rarely affected. Placque-like, hyperemic, scaly, lesions occur. Ocular complications include blepharitis, conjunctivitis, and keratitis. These are rather rare but do occur and are as resistant to therapy as the basic disease. They should be looked for in every cases of psoriasis, but it is a fallacy to assume that every conjunctivitis or blepharitis encountered in patients with psoriasis is psoriatic in origin. Many such inflammations respond to the usual forms of treatment and have nothing to do with the skin disease.

Treatment of Nonspecific Eczema.—The basic treatment of the acutely inflamed eyelid in nonspecific eczemas is a gentle and soothing, stage-by-stage symptomatic approach. Wet dressings are used for the acute stage of edema and redness. Pastes, such as Lassar's, are necessary in the subacute stage. Soap and water should be prohibited, olive oil may be used for cleansing. Mild ointments are used in the more chronic stage. Pharmaceutically active, more specific drugs, such as sulfur, mercury, tar and vioform, are reversed for chronic infiltrated cases. These drugs are also available in vanishing cream bases which by their nature embody some of the principles of the stage-by-stage approach and thus may be substituted if the patient cannot be seen often enough.

SUMMARY

The successful management of eyelid eczemas requires differentiation of the major causes of the condition, as the treatment will vary accordingly. An incorrect diagnosis leading to faulty therapy not only will yield no benefit, but may result in aggravation of the original dermatitis. In practice, three main groups are encountered: (1) allergic eczematous

dermatitis, due to contact allergy, in which the basic treatment is elimination of the allergens; (2) infectious eczematoid dermatitis generally secondary to staphylococcal infection, the most common cause of chronic eczema encountered by ophthalmologists, in which intensive treatment with anti-infective medicaments, staphylococcus toxoid and vaccine is indicated; and (3) certain generalized dermatoses such as atopic dermatitis, seborrhea and psoriasis, in which the nonspecific eyelid eczema that occurs along with diagnostic lesions elsewhere on the skin, requires gentle, stage-by-stage, symptomatic treatment. Differentiation of these clinical entities is of great value in the treatment of eyelid eczemas, which often may present therapeutic problems.

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Submitted April 18, 1956

ACTH: ITS USE BY THE SLOW INTRAVENOUS INFUSION METHOD FOR THE RELIEF OF INTRACTABLE BRONCHIAL ASTHMA

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THE functions of the adrenal glands have been investigated by numerous workers in all parts of the world. Interest in the adrenal glands and their functions was first aroused by the publications of Addison and Secquard.[1] In 1933, the first adrenocorticotropic hormone was isolated in crude and impure form from the anterior pituitary gland by J. F. Collip, E. M. Anderson and D. L. Thompson.[2] They also provided us with information on the differentiation and chemistry of ACTH. Great interest in ACTH, its physiologic and metabolic functions, was further stimulated by the development of the adrenal ascorbic acid quantitative bioassay method by Sayers and his co-workers.[3,4] Sayers, Li and their various associates[5,6] then firmly established that adrenal cortical function occurred under complete pituitary control.

ACTH became available to the medical profession as a result of the monumental work by the aforementioned group of workers. We, as allergists, became greatly interested in ACTH when Randolph and Rollins,[7,8] A. McGhee Harvey and his co-workers,[9] and B. Rose and associates[10] reported that patients suffering from severe and prolonged intractable asthma and status asthmaticus responded dramatically to ACTH therapy administered via the intramuscular route. Lockey and co-workers[11] later reported on the treatment of nineteen cases of status asthmaticus with ACTH administered in solution, slowly via the continuous intravenous infusion method.

A forty-six-year-old white man suffering from extremely severe status asthmaticus of five days' duration was hospitalized and the first to receive treatment by this method during June, 1950. All other measures had failed to relieve his asthma. His response to ACTH slowly administered intravenously was dramatic. It was then postulated that the slow introduction of ACTH into the venous system simulated the physiologic production of ACTH by the pituitary. The further thought was advanced that utilization of the introduced ACTH also took place in the same manner, and only that amount needed to bring about a reversal of symptoms was utilized. The use of ACTH by means of the continuous intravenous infusion method was also reported on at the meetings of the Pennsylvania Allergy Association (Meadville, September, 1950)[12] and (Wernersville, May, 1951),[13] and also during one of the discussions at the Seventh Annual Congress of the American College of Allergists, Chicago, February, 1951.[14]

Presented at the Twelfth Annual Congress of The American College of Allergists, New York, New York, April 18, 1956.

The ACTH used is obtained from the anterior pituitary glands of domestic animals. In lyophilized form it is soluble in distilled water and physiologic saline. In lyophilized form, ACTH is stable indefinitely, even when subjected to all types of temperature extremes.

It is now known that ACTH stimulates the adrenal cortex to secrete the adrenal cortical steroids, predominantly the so-called "compound F" hormones. We know that the adrenal cortical hormones enable the body to withstand severe stress and injury. Individuals suffering from severe intractable asthma undergo severe endogenous stress.

ACTH administered via the continuous intravenous infusion method provides gentle stimulation of the adrenal cortex. This stimulation allows the tissues and cells of the body to act or function in a normal manner. It is through this action that hypersensitivities are inhibited and at times reversed. Goodall and Unger's[15] method of administering continuous intravenous aminophylline therapy was adapted for administering ACTH via the same route.

METHOD FOR ADMINISTERING CONTINUOUS INTRAVENOUS ACTH THERAPY IN STATUS ASTHMATICUS

Indications.—Hospitalized patients in whom all previous measures have failed.

Amount of ACTH.—Ten to 20 mg, depending upon severity of symptoms.

Vehicle Used.—One thousand cc of 5 per cent glucose in distilled water. Dissolve amount of ACTH to be used in 5 cc of sterile distilled water and add same to a bottle containing 1000 cc of sterile solution of potassium chloride, 20 mEq of potassium as potassium chloride. The administration of potassium salts must be carried out with caution in order to avoid excessive plasma concentrations with resultant potassium intoxication.

Use of Vehicle.—The 1000 cc of 5 per cent glucose in distilled water containing from 10 to 20 mg of ACTH (use large dose only if patient is in extreme and severe status) plus 20 mEq of potassium chloride, is then administered by continuous intravenous infusion. 0.5 to 1.0 gm of aminophylline or 1 to 2 cc of 1:1000 epinephrine hydrochloride can be added per liter of fluid being infused to produce bronchospasmolytic effect.

Rate of Flow.—Twenty-eight drops per minute, one liter in twelve hours.

Equipment.—(a) A 22-gauge, short bevel, 1½ inch needle; (b) 10 to 20 mg ACTH dissolved in 5 cc of distilled water; (c) one sterile ampule of potassium chloride, 20 mEq; (d) 10 cc syringe plus one 22 gauge, 1¼ inch needle; (e) rubber tubing with clamp; (f) liter flasks; and (g) padded splint for forearm.

Site of Injection.—Broad volar and dorsal surface of forearm. Avoid joints.

Precautions.—(a) Flask must not run dry; (b) if vein becomes inflamed, transfer to another vein; (c) Tarail and Elkinton[15a] recommended that the rate of administration be controlled so as not to exceed 20 mEq of potassium per hour. They quote the work of Darrow, who estimated that 3.5 mEq per kg of body weight per day may be given safely in a period of four to eight hours.

Toxic Effects.—None observed.

Duration of Treatment.—Average—one to three days in status asthmaticus.

Results.—This method of therapy in our hands has produced excellent results. The stimulation that the patient receives from continuous ACTH therapy usually produces complete relaxation within a period of twenty-four to forty-eight hours. Relief in most cases has been dramatic. It is only necessary to give this form of therapy for a period of from twenty-four to seventy-two hours.

This report deals with forty-one patients who have received treatment by the continuous intravenous infusion method with ACTH alone or ACTH in combination with aminophylline or epinephrine for the relief of status asthmaticus. Special attention was also given to the nutrition of all patients treated and to the relation of specific nutrients to what is known as pituitary-adrenal function.

On a number of occasions we administered aminophylline or epinephrine, which act as bronchospasmolytic agents in conjunction with the ACTH. Only a minimum of the last-mentioned forms of therapy was employed. Thirty-five of the patients responded to treatment. They remitted and became symptom free for variable periods of time. The other six patients treated remitted partially, but five of this group of patients had chest findings that were irreversible.

Careful attention was given to the nutrition of each patient treated. This factor must always be taken into consideration, particularly if the nutrition of the patient is poor at the start of ACTH therapy.

Investigators[16] have proved that increased protein catabolism, sodium retention, potassium diuresis, and disturbances in carbohydrate metabolism occur during the administration of ACTH. Phosphorus and calcium metabolism is also disturbed.

It is also known that an adequate diet, one that contains small amounts of carbohydrates but large amounts of proteins, definitely results in adrenocortical stimulation. Protein deficiency results in diminished adrenocortical function. Sodium and potassium are dramatically associated with adrenocortical function, sodium deficit or potassium excess exerting a stimulating effect, and vice versa.

It has also been stated that vitamin A deficiency can be associated with

a significant decrease in the ability to withstand stress.[16] Other vitamins are also essential.

A patient receiving ACTH therapy or corticoids in other form should be on a diet that is high in protein, calcium, phosphorus and potassium; low in carbohydrate and sodium, and still contains sufficient calories. It is also well to give supplementary vitamins,* since we do not know the rate of absorption, rate of utilization and excretion of the essential vitamins, unsaturated fatty acids, and other factors essential to maintenance of good nutrition.

SUGGESTED DIET

Carbohydrate, 167 grams	Fat, 210 grams
Protein, 112 grams	Calories, 3006 grams

Be sure to omit salt both in cooking and as a seasoning.

Divide your food into the following meals:

Breakfast:	
milk (sodium free)	1 exchange (1 cup)
fruit (sweet)	1 exchange
bread (sodium free)	1 exchange
meat	2 exchanges
fat	2 exchanges
cream	½ cup
Lunch:	
milk (sodium free)	1 exchange
vegetable A	as desired
vegetable B	1 exchange
fruit (sweet)	1 exchange
bread (sodium free)	1 exchange
meat	4 exchanges
fat	4 exchanges
cream	¼ cup
Dinner:	
milk (sodium free)	1 exchange
vegetable A	as desired
vegetable B	1 exchange
fruit (sweet)	1 exchange
bread (sodium free)	1 exchange
meat	4 exchanges
fat	4 exchanges
cream	¼ cup

The following foods should be used in abundance to increase the intake of calcium and phosphorus: cauliflower, cabbage, carrots, turnips, turnip greens, kohlrabi, parsnips, okra, kidney beans and navy beans.

Due to their high sodium content the following foods and seasonings are not to be used: beets, beet greens, celery, dandelion greens, kale, spinach, sauerkraut, swiss chard and any frozen or canned vegetables to which salt or sodium has been added; brains, clams, crab, frozen fish to which salt has been added, mussels, heart, kidney, lobster, shrimp, haddock; baking powder, baking soda, bouillon

*Filmtabs,® Nualets.® Two tablets three times daily. Abbott Laboratories, North Chicago, Illinois, U.S.A.

cubes, celery salt, commercial French dressing or mayonnaise, garlic salt, ketchup, meat tenderizers containing sodium, mono sodium glutamate (found in Accent,® Zest,® et cetera) meat sauces, molasses, prepared mustard, olives, pickles, salt (plain or iodized), soya sauce, syrups (commercial), Worcestershire sauce.

FOOD EXCHANGE LISTS

List 1—Milk Exchanges

Carbohydrate, 12 gm	Fat, 10 gm
Protein, 8 gm	Calories, 170

	Quantity
Sodium free milk	1 cup

List 2—Vegetable Exchanges

A. These vegetables may be used as desired in ordinary amounts. Carbohydrate, protein and fat content negligible.

asparagus	escarole	rhubarb
broccoli	eggplant	string beans, young
brussels sprouts	lettuce	summer squash
cabbage	mushrooms	tomatoes (Limit—1 or ¼ cup juice)
cauliflower	okra	watercress
chicory	pepper	
cucumbers	radishes	

B. Vegetables: 1 serving equals ½ cup, equals 100 gm. Carbohydrate, 7 gm; protein, 2 gm; calories, 36.

carrots	rutabaga	onions
peas, green	turnip	pumpkin
		squash (winter)

List 3—Fruit Exchanges

Carbohydrate, 10 gm; calories, 40.

	Quantity
apple (2" diameter)	1 small
applesauce	½ cup
apricots, fresh	2 medium
apricots, dried	4
banana	½ small
blackberries	1 cup
raspberries	1 cup
strawberries*	1 cup
blueberries	⅔ cup
cantaloupe*	¼
cherries	10 large
dates	2
figs, fresh	2 large
figs, dried	1 small
grapefruit*	½ small
grapefruit juice*	½ cup
grapes	12
grape juice	¼ cup
honeydew melon, medium	⅛
mango	½ small
orange*	1 small
orange juice*	½ cup
papaya	⅓ medium

*See footnote next page

peach	1 medium
pear	1 small
pineapple	½ cup
pineapple juice	⅓ cup
plums	2 medium
plums, dried	2 medium
raisins	2 tbs.
tangerine*	1 large
watermelon	1 cup

List 4—Bread Exchanges

Carbohydrate, 15 gm; protein, 2 gm; calories, 68.

	Quantity
bread (sodium free)	1 slice
cereals, cooked (not quick cooked)	½ cup
puffed wheat, puffed rice, shredded wheat	¾ cup
rice, grits, cooked	½ cup
spaghetti, noodles, cooked	½ cup
macaroni, etc., cooked	½ cup
sodium free crackers	5
flour	2½ tbs.
vegetables	
beans and peas, dried, cooked (lima, navy, split pea, cowpeas, etc.)	½ cup
corn	⅓ cup
parsnips	⅔ cup
potatoes, white	1 small
potatoes, white, mashed	½ cup
potatoes, sweet, or yams	¼ cup

List 5—Meat Exchanges

Protein, 7 gm; fat, 5 gm; calories, 73.

meat and poultry (medium fat) (beef, lamb, pork, liver, duck, goose, chicken, etc.)	1 ounce
egg	1
sodium free cottage cheese	¼ cup

List 6—Fat Exchanges

Fat, 5 gm; calories, 45.

unsalted butter or margarine	1 teaspoon
cream, light	2 tbs.
cream, heavy	1 tbs.
avocado (4" diameter)	⅛
oil or cooking fat	1 teaspoon
nuts (unsalted)	1 small

(Foods to which patient is known to be clinically sensitive should also be omitted from diet.)

A patient suffering from intractable asthma plus infection, in addition to poor nutrition, should also receive broad spectrum antibiotic therapy. The hypersusceptibility[17] of malnourished patients suffering from intractable asthma is well known. Sometimes even small amounts of ACTH will inhibit the inflammatory reaction. This occurs in malnourished patients because of increased protein catabolism.

*These fruits are rich sources of vitamin C. All fruits are fresh or canned, unsweetened.

The following laboratory studies were carried out, when feasible, on each patient who received ACTH therapy: complete blood count, sedimentation rate studies, complete urinalysis, pretreatment circulatory eosinophil count, and post-treatment circulatory eosinophil count.

The patients studied were all hospitalized. Pituitary adrenocorticotropic hormone was administered only by the continuous intravenous infusion route. Treatment was usually instituted early in the morning, at times continuing until approximately 8:00 or 9:00 p.m. On eleven occasions it was necessary to continue the therapy throughout the night.

In closing, we therefore wish to stress seven factors in the treatment of intractable bronchial asthma with ACTH plus aminophylline or epinephrine if necessary, administered via the continuous intravenous infusion method.

1. It is not essential to give large amounts of ACTH. The clinical response is prompt.

2. It should be administered slowly. The slower the infusion rate, the longer the effect. Relief in most cases is dramatic. For bronchospasmolytic effect, aminophylline or epinephrine 1:1000 can be infused in conjunction with the ACTH.

3. A patient receiving ACTH or corticoids in other form should be on a diet that is high in protein, calcium, phosphorus and potassium; low in sodium and carbohydrate and still contains sufficient calories.

4. Patient's diet should be supplemented with adequate vitamins, especially vitamin A.

5. A broad spectrum antibiotic, or if sensitivity tests have been done, the proper antibiotic, should be administered if infection is present.

6. None of the patients treated experienced untoward effects from the infusions of ACTH.

7. Duration of hospitalization is shortened. Further saving in expense to patient results when ACTH is administered via the continuous intravenous infusion route. The total dose is approximately 12 to 16 per cent of that required intramuscularly.

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Submitted April 29, 1956

ENVIRONMENTAL CLIMATOLOGIC THERAPY IN BRONCHIAL ASTHMA

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EVER since people have been known to have asthma, differences have been noted in the amount of asthma they suffer in relationship to the various localities. This has caused a great deal of speculation as to what environmental changes are significant and how they operate. Since individuals themselves vary as to their surroundings, particularly psychosomatics-wise, this has further complicated any clear elucidation of the subject. Research progress in biophysics and aerobiology has only recently developed significantly enough to make medical application of this knowledge a distinct future possibility. At present, our experience is insufficient to point toward specific climatologic and geographic phenomena and bring them into focus with correlated functions of living matter. Observation and empiricism has had to be substituted frequently for this lack of scientific data.

That the weather does affect MAN and his health has been noted from the days of Hippocrates and his preceptors to the present.[1] Weather exerts a profound influence upon allergic mechanisms. Many persons suffering with asthma can foretell an impending weather change before it becomes recognizable to their nonallergic companions. But how or why? At present, neither we nor anyone have the final answers. We do propose, however, to review briefly some of the pertinent investigational knowledge derived from the laboratory and the clinic, and, in addition, to develop a practical therapeutic approach to this problem based on our combined experiences in medical practice as seen in Florida.

Seasonal influences have long been recognized in that in the spring and autumn the organism's resistance is lower and the sensitivity is increased. Temperature may have a general influence upon races and nations, metabolic stress being greatest in the middle temperate latitude and declining toward the regions of extreme cold and heat.

Barometric changes influence the body physiology. There is a normal diurnal pressure variance with maximum pressure at 10 a.m. and p.m. and minimal at 4 a.m. and p.m. The body must adjust to these changes in order to prevent extravasation into the tissues with a falling barometer, and vice versa. The mechanism to normal adjustment is not known, nor the reason for the failure to adjust in the abnormal person. Allergic skin test reactions may be stronger when the barometer is low than high. Low atmospheric pressure can increase the intensity and number of anaphylactoid reactions in guinea pigs, as can sudden changes in general weather conditions.

Presented before the Twelfth Annual Congress of the American College of Allergists, New York, New York, April 16, 1956.

Microscopic observations of blood capillaries show that the vascular system undergoes abnormally exaggerated reactions (spasms, paralysis) following thunderstorms or sudden changes in weather.

The mucous membranes of the upper respiratory tract, particularly the nasal mucosa, become pale and taut in a cold moving atmosphere; while reflex vasoconstriction and ischemia of the nasal mucosa occur when the body surface is chilled. Strong winds have an unfavorable effect, perhaps due to this sudden cooling effect.

Damp air and fog tend to elicit attacks, primarily because of the increased breathing resistance that the moisture imparts and, secondarily, by the fact that the amount of suspended solid particles in the air is proportional to the fog density and may be five times as great as on a clear day.

Asthmatic patients tend to feel better in dry warm climates, particularly those persons with excessive productive sputum (infective types). On the other hand, the patient with scanty viscid phlegm may have greatly aggravated symptoms under these conditions and will do better in the moister sea shore areas.

The influence of high altitudes up to 4000 ft. may be *directly* beneficial, due to decreased air pressure and lower humidity, with resultant better ventilation, and may be indirectly helpful due to decreased pollen, fungi, and bacteria.

The type and quantity of air contaminants vary due to geographic and climatic conditions. Prolonged storm-free periods may aggravate allergic symptoms by the accumulation and lack of dispersal of the air contaminants. Rain and snow can clear the atmosphere very efficiently. If air at a high level is cooler than at ground levels, there will be an upward dispersal of air contaminants. High pressure fronts characteristically move air in a downward direction tending to keep locally produced contaminants closer to nose level.

Air ionization may have a significant effect on the body mechanisms. Negative ionization of the offending airborne substances, as dust, pollen fungi, viruses and bacteria, apparently diminish their allergic toxicity by changing their electric potential thus rendering them temporarily inactive. Atmosphere normally contains both negatively and positively charged ions. On mountain tops, negatively charged ions predominate; with the approach of the thunderstorm, the number of positive ions become greater. Ion generators for room use to develop a highly negatively charged atmosphere are now available. Clinical investigation is in progress to see whether patients with asthma will respond favorably to such physical alterations of the environment.[2]

Rinkel and his co-workers in their book on "Food Allergy"[3] stress that it is not the change in weather that produces the symptoms; rather it is the allergic reaction that makes the patient susceptible to the weather changes. He feels that this susceptibility can be reduced or eradicated by

specific food eliminations. (This may at times be true but we should like to broaden this concept to complete eradication of all specific allergens).

THERAPEUTIC PROGRAMS

In directing a patient to remove from a life long habitation to any other locale, a physician undertakes graver responsibilities than many realize. It is important to bear in mind what the patient is being *taken away* from, as well as what he is *moving into!* Is he certain the patient does not carry his antigen along with himself as food, feather, or fear? Does he go to an area that has less of that to which he is sensitive? Or does the change in climate merely expose the individual to a less wide range of seasonal temperatures, hence allowing him to live with his allergies more comfortably? Unless by the move the patient is separated from an over-demanding employer, a dominant mother-in-law, or there is a complete "parentectomy" (as needed in some childhood asthmas), in all probability the psychosomatic factors will be unaltered.

Many people are not bothered enough by climatic and weather handicaps to justify breaking long established business and social relationships for removal to different climates. Simple environmental changes may help, such as removal to another section of town, away from locally irritating industrial fumes, or from a house with a high mold count to an area of higher elevation, or away from a fog laden sector. One should close the bedroom windows at sundown, when the cooling air condenses and pulls contaminants into the room. Removing the child's crib away from an exposed wall that chills the sensitive nasal mucosa of the sleeping infant may also be helpful. Home conditions in any location can now be better controlled by scientific regulation of temperature, humidity, and dust factors. Newer air conditioners are financially within the reach of many more asthmatic patients.

However, with the rapidly increasing proportion of elderly people in the population and with their waning vitality, they feel their weather handicaps more keenly, and are often better situated economically to make the needed change in location. If and when the patient and doctor have definitely decided upon a climatic change, a recent publication, "Regional Allergy," will be of invaluable assistance in helping to make the choice.[4]

There is no doubt that weather and environment are stress factors that can react on an individual, his tissue, and his cells to produce alterations of his autonomic nervous system, endocrines, body fluid chemistry, including Ph, K/Ca balance, and immune processes, in a manner similar to other stress factors, such as allergens and emotions. It behooves us to treat this individual intensely and completely in his own local habitat before we, as physicians, come to the conclusion that it is necessary to advise a radical change in environment or climate. On the other hand,

we have seen many patients whose asthma was helped by such changes. In central Florida, when the wind is from the southeast, a dyspneic asthmatic patient begins to breathe easier within two miles of the beach as he drives eastward to the ocean, unless he is too mold sensitive. There are those, however, who are made distinctly worse. *One must still determine accurate specific etiology whenever possible.*

SUMMARY

Climate therapy has its place in the treatment of asthma only after a thorough study of all the factors involved in the case has been conscientiously carried out by a capable specialist. The person with intractable asthma might well be relieved at home if a painstaking search for every causal agent is made. This search would carry the investigator into the diet, the air content, the furniture, draperies, cosmetics, bed clothes, animal pets, insecticides, and even the thoughts and interpersonal relationships of the patient.

If an offender is found that cannot be avoided or a personal or emotional situation that cannot be resolved, then removal of the patient to a different environment is indicated. The choice of the new environment must be dictated by a thorough knowledge of the new area in comparison to or contrast with the old. Old possessions, old situations of tension must be left behind just as realistically as old pets and pollen offenders.

These uprootings can themselves be a shaking experience and cannot be lightly undertaken. Therefore, a trial period of living in the new area is always worth considering. Likewise, every effort toward making the old environment allergically habitable is suggested, and more can now be done than ever before, both to the patient and to the room air and furnishings.

There is little doubt that certain types of cases, particularly inhalant asthmas, can be strikingly benefited by a change of climate (and geography). As long as this is the case, such changes will be recommended. Therefore it behooves every specialist in this field to apply the finest criteria and his own considered judgment in the selection of those cases for which he will advise drastic change of environment.

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MOLAR SODIUM LACTATE IN ACUTE EPINEPHRINE-FAST ASTHMATIC PATIENTS

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WHILE epinephrine is no doubt the most potent and valuable bronchial antispasmodic agent in the symptomatic relief of bronchial asthma, all too often patients develop "tolerance" to it and even so-called "fastness." These epinephrine-resistant patients present a special therapeutic problem, and many methods have been tried with varying success to restore the apparent tolerance that develops toward the bronchial antispasmodic action. While many explanations have been given for the lack of effect of epinephrine in these asthmatic patients, the effect of change in pH on the action of this drug and its antagonist, acetylcholine, has been largely disregarded clinically.

Mathews[1] in 1916 noted that oxidation of epinephrine was "hastened by alkalies." Snyder and Andrus[2] concluded that "the effect of epinephrine upon the terrapin heart is in part a function of the H ion concentration of the perfusate." Snyder and Campbell[3] in 1920 stated that there was increased vasoconstriction as the pH of the perfusing fluid rose. McCarrison[4] noted the effects of asphyxia in the epinephrine-iris-light sensitivity reaction in the enucleated eye of the toad. The action was very poor in the later stages of asphyxia and was said to be due to increased acidity of the blood. Alpern and Sorkin[5] in 1925 perfused the isolated rabbit's ear with epinephrine in Locke-Ringer's solution in different H ion concentrations and found increased effect with increased pH up to 8.1. Salent and Johnston[6] in 1924, working on the frog's heart, found decreasing effectiveness with decrease in pH until, in 6.5 to 6.7, stimulation was small and transitory. Burget and Visscher[7] in 1927, working with pithed cats and keeping artificial respiration constant, found that small intravenous injections of epinephrine act with progressively increasing effectiveness, provided the pH of the blood is rising. They concluded that this was not due to the drug's sensitizing the sympathetic nervous system. It seemed to be due either to an increased irritability of the sympathetic nervous system as a result of the increased pH, or rise in pH causing epinephrine to be oxidized more completely and rapidly. Beznak[8] in 1934 found out, on the other hand, that frogs' hearts at pH 7.8 were resistant to repeated application of acetylcholine, but as the pH was shifted toward the acid side the effects were increased. Campbell[9]

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in 1950 found that cardio-inhibitory effects resulting from faradic vagal stimulation and intravenous acetylcholine were increased in dogs with a lowered pH. That the effects may not be due entirely to the systemic pH is suggested by the work of Clark.[10] He notes that digestion in cells results in acid products which attract fluid, leading to edema, anoxia and further acidity. The pituitary-adrenal-thyroid glands stimulate alkalinization, but this is limited due to their own share in general anoxia acidosis. Repeated exposure to allergens, as in asthma, may diminish response in part because of reduction in available alkaline reserve. Barcroft[11] in 1955, working on voluntary human suspects, noted that epinephrine in man stimulated respiration and the pH instead of becoming more acid actually became more alkaline during stimulation. This, it seems to me, points up the importance in nature of an alkaline media for the best action of epinephrine. In 1954, one of the authors (G.S.C.) found that the alteration in the cardio-inhibitory effects of either faradic vagal stimulation or acetylcholine in dogs can be correlated with changes in blood pH.

In spite of the vast amount of work (here only very briefly and sketchedly reviewed) which indicates the marked effect of pH level on the activity of epinephrine and acetylcholine, very little work has been reported in humans and in clinical studies. The self evident obstacles involved in studies of this type, which are the very illness of the acutely acidotic patient, the difficulties in obtaining arterial pH in these people, and the inability to determine by CO_2 combining power, alone respiratory acidosis, all have made for neglect in this very important field of therapeutics.

With full knowledge of the dangers of intravenous epinephrine (cerebral hemorrhage, arrythmias, et cetera), human volunteers were used. The well-known cardio-acceleration and electrocardiogram effects of epinephrine were especially noted. Electrocardiograms, respiration, blood pressure, heart rate, blood CO_2, arterial pH, and peripheral effects were documented. In general the epinephrine was infused into the antecubital vein while the subject lay on a table. In control periods saline alone was infused and during the experimental periods saline plus epinephrine was administered. The brachial artery was used for pH as well as blood pressure reading. Acidosis was attained by breathing 10 per cent CO_2 and alkalosis by voluntary hyperventilation.

The marked difference in the cardio-accelerator response to epinephrine is at once apparent. In the first case the heart rate increased from 114 to 128 with the administration of ¼ cc of epinephrine 1/10,000 in a pH of 7.25, induced with breathing 10 per cent CO_2, while ⅛ cc of the same solution in a pH of 7.61, induced by hyperventilation, caused an increase of 114 to 156. In the second case, while on CO_2 with a pH of 7.22, the rate increased from ninety to ninety-six when 0.3 cc of 1/20,000 epinephrine was given intravenously. The same dose caused an increase in rate from fifty-five to 114 when hyperventilation gave a pH of 7.60.

CASE I.

	CO_2	pH	p CO_2	Rate Before Epinephrine	Rate After Epinephrine
Control room air	26.8 mm	7.36	47.5	60	114 (¼ cc 1/10,000)
10 per cent CO_2	29.4 mm	7.25	66.0	114	128 (¼ cc 1/10,000)
Hyperventilation	20.6 mm	7.61	20.9	114	156 (⅛ cc 1/10,000)

CASE II.

	CO_2	pH	p CO_2	Rate Before Epinephrine	Rate After Epinephrine
Control room air	26.4 mm	7.38	45.0	60	96 (0.3 cc 1/20,000)
10 per cent CO_2	31.3 mm	7.22	75.0	90	96 (0.3 cc 1/20,000)
Hyperventilation	21.3 mm	7.60	22.0	55	114 (0.3 cc 1/20,000)

The electrocardiogram showed little change when epinephrine was injected in acidosis. Marked electrocardiogram changes, with numerous ventricular extrasystoles and marked depression of the ST segment in the second lead, which was used, were noted especially in higher pH levels. This was the reason for reducing the dosage in hyperventilation in case number one.

With these results, it was decided to use molar sodium lactate in patients with severe allergic asthma who were either very tolerant of epinephrine or had developed epinephrine-fastness. Twenty-two patients were treated with 120 to 150 cc intravenous molar sodium lactate. On four of these, arterial pH determinations were somewhat depressed. (7.30; 7.28; 7.27; 7.30). As expected, the CO_2 combining power of the blood was of no help. The results were good, marked relief of symptoms occurring within a short period of time, varying from ten minutes to two hours. Neither epinephrine nor any other drug was used to obtain relief—the results were apparently due to the endogenous drug. The rapidity of response would seem to indicate that some other mechanism beyond the systemic pH might be involved—possibly local tissue acidosis as suggested by Clark's theory.[10] At any rate, the results were frequently extremely dramatic in cases where relief was urgently needed. It is possible that larger doses of epinephrine than usually administered or intravenous epinephrine might give equally good results, but it would seem a much more dangerous procedure, except in cases where sodium retention is undesirable (as in cardiac decompensation).

CASE HISTORIES:

Case 1.—J. G., a forty-five-year-old man, gave a history of perennial asthma of twenty years duration aggravated by exertion, change of temperature, and upper respiratory tract infections. Epinephrine nebulization gave relief unless attacks were prolonged, then no effect was obtained. Many allergic regimes including change of

climate, diets, and desensitization, were tried with no permanent relief. He was fairly comfortable between acute episodes. He had been hospitalized many times in asthmatic states during which the usual therapy with aminophyllin, oxygen, intravenous fluids, etc., gave relief after a few days. He would then become again epinephrine-sensitive. During admission described, his pH was 7.30 and his CO_2 32. He was in status asthmaticus and epinephrine resistant. Intravenous molar sodium lactate, 120 cc, gave marked relief in one hour. No other medication was given. His pH rose to 7.39 and he was asymptomatic the next day. The results were much more complete and faster than in other past episodes with other routines.

Case 2.—A. K., a forty-nine-year-old married woman, gave a history of asthma since age nineteen. She had perennial symptoms aggravated by colds, emotional episodes, dust, and penicillin. Many usual therapeutic regimes gave temporary relief, including epinephrine by spray and parenterally for her attacks. This gave marked relief except during very severe episodes when it had no effect, either parenterally or by inhalation. Numerous hospitalizations lasting up to two weeks gave her remission with the use of rest, aminophyllin, sedatives, intravenous glucose, and oxygen. ACTH and cortisone had been given in the last few years with good results but marked emotional disturbances. During her last hospital admission the patient was in status asthmaticus and was epinephrine-fast. The blood pH was 7.27 and CO_2 26. Intravenous sodium lactate was given. In about twenty minutes, before a total of 120 cc had been given, the patient noted marked relief, much more than with any other of the many procedures previously used in her long history. She had a little wheezing the next few days, which responded promptly to epinephrine by inhalation.

CONCLUSION

It is evident from animal and clinical work that the action of epinephrine is definitely correlated with the pH of the blood. It would seem that epinephrine fastness is due, at least in great part, to either general or local acidosis. By elevating the pH to the alkaline side, correction of this condition often results—with dramatic relief of epinephrine resistant asthmatic states. Increasing the dose of epinephrine beyond that usually administered (especially if this is done in conjunction with other therapeutic regimes) may result in adequate response. However, it would seem that molar sodium lactate, unless contraindicated because of the danger of sodium retention, is the treatment of choice for asthmatic patients who are epinephrine resistant. In these cases, endogenous epinephrine apparently gives results either because of increased sensitivity in alkaline media, or because of depressed effects of acetylcholine in increased blood pH.

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Submitted May 3, 1956

POSTGRADUATE COURSES ON DISEASES OF THE CHEST

The Council on Postgraduate Medical Education of the American College of Chest Physicians will present the following Postgraduate Courses on Diseases of the Chest during the period January-April, 1957: Vanderbilt University, Nashville, Tennessee, January 14 to 18; Mark Hopkins Hotel, San Francisco, California, February 25 to March 1; and Bellevue-Stratford Hotel, Philadelphia, Pennsylvania, April 1 to 5.

Tuition for each course is $75. The most recent advances in the diagnosis and treatment of chest diseases—medical and surgical—will be presented. Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

POSTGRADUATE COURSE ON PULMONARY FUNCTION

The American Trudeau Society, in co-operation with Harvard, Boston University, and Tufts University Medical Schools and other agencies, will sponsor a postgraduate course on Pulmonary Function, to be held in Boston, Massachusetts, March 25-29, 1957. Discussed in detail will be the Mechanical and Physiologic Aspects of Respiration and Methods of Analysis of Pulmonary Function. Also discussed will be Cardio-Pulmonary Relationships. Alterations of Pulmonary Function by Disease and Therapy, and the Clinical Application of Tests of Pulmonary Function.

The fee for the course is $75.00. The hours are 9:00 A.M. to 5:00 P.M., each day at the Dowling Amphitheatre of the Boston City Hospital.

Applicants should write directly to the Chairman, Dr. Edward J. Welch, 1101 Beacon Street, Brookline 46, Massachusetts.

ANAPHYLACTIC SHOCK DUE TO THE USE OF COSMETICS

Case Report with Discussion

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THIS paper represents the report and discussion of a somewhat unusual case. It presents the story of a woman who went into shock due to her use of a cosmetic, and the therapy—both the immediate clinical therapy and the continuing psychiatric therapy—which brought about her recovery. We were fortunate in that the syndrome in this case was so clear cut. It occurred to me that this case should be placed on record for the guidance of clinicians who may not have the assistance of a clearcut history of the events preceding such a shock. The patient arrived at my office driving her own car some two hours after the onset of symptoms, and was able to give a coherent history of her rapidly worsening condition.

CASE REPORT

Mrs. S. B. is a forty-four-year-old white woman, who had always been in fairly good health, having had only a few minor illnesses. Since 1952, however, she had noticed the onset of allergic symptoms, with headache and hay fever. At that time she started to have frequent nasal stenosis, attacks of sneezing, and a large amount of waterly nasal discharge. No attacks of asthma accompanied these symptoms. Her hay fever was seasonal, inasmuch as in early spring and fall the nasal discharge and blockage were worse, but she suffered some discomfort all year round.

In May, 1952, she underwent an allergy survey in my office and at that time she had food allergies, mainly to spices. She also gave a 3 to 5 plus reaction to a number of inhalants, such as feathers, dust, orris root, tree pollens, and some of the weeds. I gave Mrs. B. immunization treatment in 1952 and 1953. Occasionally the use of antihistaminic agents was required.

On this regime she was quite comfortable after the first series of injections in 1952, and had only a few days of discomfort in 1953. For two years she was almost free of symptoms, and was considered "cured." At my insistence she had remained on a diet without spices, and used only cosmetics made without orris root.

In November, 1955, however, she succumbed to a television advertisement of a new facial cream. Within ten minutes after application of this cream to her face, her nasal passages closed. Her condition became worse rapidly and she developed a terrific frontal headache. A half hour later she noticed vertigo. Two hours after the use of this cream, she was seen in my office. The rapidity of both the time sequence and deterioration in her condition are especially noteworthy.

Upon reception in my office, it was impossible to take the blood pressure, the pulse was imperceptible, the skin was cold and clammy, the face appeared "white as a sheet." She complained incoherently about her throat closing up and I noted that a glottis edema was developing. She was only semi-conscious.

As treatment, epinephrine was administered, with calcium gluconate given intravenously. She was wrapped in hot blankets, and lay in my office for about three

Presented at the Twelfth Annual Meeting of The American College of Allergists, New York, New York, April 18, 1956.

hours before I considered it safe to transfer her to the hospital.

In the hospital Mrs. B. made a nice recovery within a few days. When permitted visitors, however, she went into slight shock again when a lady who was visiting her proved to be wearing a very strong perfume. The resident on duty was called. He reported to me he had obtained a blood-pressure reading of 50 mm Hg, systolic, and that the patient had all the other symptoms described above which had occurred during her first attack. It was again necessary to administer epinephrine.

Warned by this event, we noticed that slight shock of glottis edema recurred repeatedly during her hospital course whenever the patient came in contact with cosmetics. At one time, hand cream on the fingers of the nurse counting the patient's pulse rate had such an effect. Care was taken thereafter to see that Mrs. B.'s visitors were "stripped" of their cosmetics before being permitted to see the patient. After a stay of five weeks in the hospital, Mrs. B. was discharged.

In discussing this very interesting case, we have to try to get at the cause of it. We must try to understand better what shock really is, and the factors originally inducing shock which, if repeated, may cause a recurrence.

The term *shock* is not new. It was coined in 1795 by James Latta for a variety of conditions. Blalock classified shock five different ways:

1. Hematogenic shock, due to reduced blood volume.
2. Neurogenic, also primary, due to operations or accidents.
3. Vasogenic shock, due to direct action of blood vessels, as histamine effect.
4. Cardiogenic shock, due to hemorrhage into the pericardium.
5. Unclassified. (This is the classification wherein too many varieties of shock may be placed.)

Vaughan and Black in their book, describe "anaphylactic shock" very clearly. It seems, at the onset, to involve all the tissues simultaneously. It may come on immediately or after thirty minutes, rarely later. It starts with a sudden sense of great uneasiness, anxiety, pounding headache and intense throbbing in the ears. The first manifestation may be collapse. However, there is one variety of shock in which I am especially interested, and which I think is implicated in this history. I like to call this the "psychogenic shock." Under this classification I would place the persons who experience shock for physical reasons initially, and later on have recurrence of the shock when the mental conditions which prevailed at the time of the initial attack seem to recur.

In the author's opinion, Mrs. B.'s case was a true allergic or anaphylactic shock, due to the use of cosmetics, initially. But the repetitions of the shock in the hospital at the mere smell of perfume, or touch of the nurse's fingers which had cream on them, seem to me to suggest a fear fixation, manifested by "psychogenic shock." While keeping in mind that the primary problem was a severe allergy to orris root, it seemed to me the psychosomatic aspects ought to be investigated also. Therefore, before the patient's dismissal from the hospital, a number of inter-

views were obtained in an attempt to demonstrate any psychic basis. The highlights of these interviews were, briefly as follows:

Mrs. B. was the oldest of nine siblings, and had taken care of the younger ones since her early childhood. Her parents were in poor circumstances. The mother, who was not robust, laid on this eldest daughter the main load of household work and responsibility. The home life was not too pleasant for the children, as the father was extremely strict and despotic, his manners loud and noisy.

At age twenty-one the patient married. She has two sons, both now married and fathers of healthy babies. Mrs. B.'s husband is an easy-going, successful businessman. She says, "All *my wishes* for a quiet and beautiful home life are fulfilled."

Mrs. B. can be termed a "society woman." She is very attractive and well liked. She is a member of a number of organizations, such as garden club, book club, et cetera, in each of which she has been elected to serve as president at one time or another. She is an active worker in her church, has a great number of friends, and does much entertaining.

Her parents are still living, although in a different suburb of the city. Her many brothers and sisters all contribute to the parents' physical and mental well-being. However, she had recently been worried about the physical condition of her father, who suffers from cancer with metastases. She is also worried because two of her close friends were desperately ill at the time of her first shock, and both have since died. This further history of anxiety, which came to light during the interviews convinced the author he was correct in his impression of an accompanying or triggered "psychogenic shock" in this particular case.

After the release of Mrs. B. from the hospital into home care, no attempt at immunization therapy was made. She was at first kept quite isolated from exposure to women wearing cosmetics, and she continued to receive psychosomatic treatment.

About ten weeks after the original attack, she had again resumed her normal activity, except that she did not feel she was "mentally ready" to attend her club meetings (i.e., large groups of her close friends). However, after further interviews with relevant discussion, Mrs. B. now leads a normal life, and is able to attend church, the theatre, club meetings and social functions. Her fear of the odors of, or contact with, cosmetics has been overcome. Her only medication is an occasional barbiturate. At the time the trees started to bloom, she developed again her typical hay fever symptoms, which were controlled with antihistaminic agents. I intend to start her on an immunization program in the very near future.

This case is reported because, while allergy to cosmetics is well recognized, the fact that the symptoms may occur fast enough and severe enough to present acute shock is rarely reported. Recurrence of symp-

toms under the recreation of the original mental climate is interesting, and in this case psychiatric explication and therapy appear to have effected a cure.

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1627 Bull Street
Submitted April 21, 1956

CALIFORNIA SOCIETY OF ALLERGY

At its regular annual meeting in conjunction with the convention of the California Medical Association, May 1, 1956, at Los Angeles, the California Society of Allergy elected the following officers for 1956-1957:

President.....Ben C. Eisenberg, M.D., Huntington Park
President-Elect.....Willard S. Small, M.D., Pasadena
Secretary-Treasurer.....William J. Kerr, M.D., San Rafael

OREGON SOCIETY OF ALLERGISTS

Dr. Charles E. Reed, of Corvallis, Oregon, was elected president of the Oregon Society of Allergists at the annual meeting, October 18, 1956. Dr. Frank Perlman, Portland, Oregon, was elected vice president, and Dr. Roy R. Metteri, Portland, Oregon, was re-elected secretary-treasurer. Dr. George J. Schunk, Salem, Oregon, was elected to membership. Jack M. Chesebro, Portland, Oregon, was accorded honorary membership in the Society in his capacity as Executive Secretary of the American Foundation for Allergic Diseases.

The annual meeting of the Oregon Society was set for May 25, 1957, in Corvallis, Oregon, when the problem of pollen control throughout the state will be one of the major topics of discussion.

THE ALLERGIC ASPECT OF RECURRENT VOMITING IN INFANTS: IMMUNOLOGIC FEEDING

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THE frequent occurrence of a past history of regurgitation and colic in many young adult and older child patients with hay fever and asthma prompted the study of this common problem of infancy. In reviewing the histories of a large number of allergic patients, it was found that this most distressing and occasionally serious problem served as a background in greater than 50 per cent of the cases reviewed. Regurgitation and colic were noted to be of infrequent occurrence in those individuals who had been breast fed, but relatively very frequent in those receiving cow's milk formulas. Because of these facts a study of infants falling into this category was undertaken.

Changing formulas because they were thought to be too rich or too lean, or skimming milk to do away with the fat because it was thought to be the source of the intolerance, was the type of history most commonly encountered in pediatric practice for many years. As a result of the study here reported, it is felt a reversal of thought is in order. It is not the intolerance to fat with which we are concerned but rather a sensitization or "intolerance" to cow's milk protein. This protein intolerance also served as a reason for the use of soy bean milk rather than the frequently substituted goat's milk. The crossed reaction of animal milk as described by Ratner[4] deterred the use of goat's milk for the sake of more absolute clinical information.

It is felt that the importance of this study lies in the possibility that prompt attention to the original symptoms of milk allergy may in some way alert the patient and the doctor to recognize the possible allergic background of future illnesses in these individuals. The onset or spread of other allergic manifestations can be forestalled by the avoidance of potent clinical sensitizers in these people and by proper diet rotation. Prophylactically, we find it advantageous to insist that the infant born of allergic parentage be breast fed if at all possible. It was characteristic that none of the infants in our series was on breast milk at the time of complaint. In those originally fed at the breast, it was noted in the histories that upsets began very shortly after being weaned from breast milk to cow's milk.

Glaser and Johnstone[6,7] went even further in suggesting the feeding of soy milk to the newborn with allergic family background. Their thought was to improve the immunologic status of the child with respect to food allergy, as well as for feeding to accepted physical normality. The possibility of sensitization to soy bean must be kept in mind, but because of its limited use and its easy recognizability, soy bean sensitiza-

tion may easily be corrected by its elimination from the diet. It is our feeling that consideration must be given to the fact that use of the soy bean is becoming more widespread, and it is not possible to predict the many uses to which this legume may be put in the future. At the present time, however, it is a valuable food for milk replacement.

In view of the apparent relationship of allergic regurgitation and colic in the infant to hay fever and asthma in the older child and adult, the results of a simple and rational method of allergic management for the prevention and treatment of these early symptoms were studied. The original group consisted of eighty-eight infants whose complaints were persistent regurgitation of virtually all feedings. The ages varied from about three weeks to four months. The sexes were about equally divided.

The degree of difficulty experienced by these infants varied from the mild "spitting up" of a mouthful or two of the formula after feeding to the gross projectile type of vomiting after feeding. It was felt that this perhaps was some indication of the degree of sensitivity.

There were, of course, associated symptoms in some of the infants, including crying, colic, diarrhea, eczema, and in some instances, just general unhappiness. It was felt that in the majority of these cases the symptomatology was related. Infants with other complaints as their presenting symptoms, although we may have felt they were on an allergic basis, were not included in this series. Other studies in that direction are under way.

METHOD

All of the babies were immediately placed on a diet consisting of soy bean milk.[1,8] All other substances whether food or medication, such as vitamin preparations, were eliminated from the diet, which thus consisted only of soy bean milk* and water. (It was incidentally found that this formula sometimes resulted in a rather bulky stool which would be improved somewhat by boiling the formula.) The number of feedings was increased when necessary to avoid the accompanying hunger created by the withdrawal of solid foods from the infants in the upper age group of this series.

Arbitrarily, a period of four days was chosen for maintenance of the patients on the soy diet because it was felt that such an interval was sufficient to observe the relief, if any, of the regurgitation. Following this four day trial diet, other items were reintroduced in groups of two or three at each visit and the visits scheduled at about four day intervals. The acknowledged potent allergenic foods, such as wheat, egg, and milk, were introduced later than those foods with a low allergenicity.

Soy bean milk was used because it has been shown to supply the essential nutrition, because it could be easily obtained and handled, and because

*The soy bean milk used in this study was MULL-SOY, supplied by The Borden Company, New York.

it maintained normal blood protein levels.[2] It was felt that because of the normally limited diet of these young infants the most likely cause of the allergic symptomatology would probably be milk, since it was the food common to all of the infants in contrast to the wide variation of other substances in the diet. For these reasons and because milk has often been incriminated as a cause of allergy both in infants and adults[3,4,5] it was felt that here was the likely culprit.

RESULTS

Of the original eighty-eight infants observed in this series, fifty-five stopped regurgitation immediately upon being placed on the new regime of soy milk and water only. In the remaining thirty-three who continued to have difficulty, we were unable to get the close co-operation necessary when diagnosis is to be based on diet alteration.

Therefore, in the nonco-operating group, we were unable to judge properly the efficacy of the manipulation of the diet. This group included those who felt that the youngster was not getting sufficient food intake and would starve, and also those who were unable to give any reason for the lack of attention paid to the instructions concerning the diet.

On re-establishment of a complete diet, we were able to determine that forty-seven again began to regurgitate with the reinstitution of milk, three with orange juice, three with wheat, one with egg, and one with the vitamin preparation which the child was taking. Only a very few of the children observed had had egg in their diets originally. Thus, of the entire group, just under 55 per cent were proven to be sensitive to milk. Removal of the offender, after it had been shown to be the cause of symptoms, resulted in the loss of symptoms.

DISCUSSION

It is felt that a large proportion of the so-called vomiting of infancy, which heretofore was thought to be on a basis of too rich formulas, emotional upset, and unknown cause, are on an allergic basis. It is our experience that the greatest number of these infants have as their allergen cow's milk, although some of the other common foods of infancy have also been incriminated.

On a basis of careful histories taken in patients presenting themselves in later life with frank allergic disease, it was found that by far the large majority gave stories of having been vomiters as infants. Since it is well established that the greatest single factor in the etiology of allergy is heredity, it is felt that the infant of allergic parentage ought to be carefully and purposefully fed. The foods high in allergic potency ought to be delayed until the gastrointestinal tract of the infant has become somewhat less permeable. Though this might seem to be contrary to the scientific principles of infant feeding, it is nevertheless advantageous from the standpoint of decreasing the problem of food allergy in the infant and the pre-school child of allergic heritage.

The general principle of treatment of recurrent vomiting in infants is complete elimination of the offending food and replacement, if it is an essential food, with one of completely different type which is known to be less allergenic. In the case of milk, replacement may be made with soy bean milk. Substitution of the milk of animals other than the cow, such as the goat, is not recommended due to crossed reactions of the casein in animal milks.

Apparently, allergic disorders are on the increase. Certainly, better recognition, reclassification, and the introduction of the new substances, are at least partially responsible for that increase. The introduction of foods to the infant fits into the latter category. If an infant were not fed cow's milk until the age of one to one-and-one-half years, then obviously, we could not see cow's milk allergy at only a few months of age.

SUMMARY

A study of regurgitation in infancy was undertaken and it was found that a large percentage of these regurgitators ceased having difficulty when the food found to be responsible was removed from the diet. The offender was generally discovered by diet manipulation. Breast feeding, food rotation, and removal of proven allergens would appear to be the most valuable aids in caring for these infants and in the prevention of later more serious allergic complaints.

Of eighty-eight infants studied, fifty-five were promptly relieved by proper dietary management. Of the other thirty-three, several failed because of lack of co-operation in following the prescribed diets. Milk was by far the greatest offender.

With the present knowledge of the allergic mechanism, it would appear that feeding from the immunologic aspect is in order. This must not be done to the detriment of growth and development. It is possible to accomplish both.

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5. Piness, G.: Allergic manifestations in infancy and childhood. Arch. Pediat., 42:557 (Sept.) 1925.
6. Glaser, J., and Johnstone, D. E.: Soy bean milk as a substitute for mammalian milk in early infancy. Ann. Allergy, 10:433, 1952.
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704 West Wisconsin Avenue
Submitted July 12, 1956.

Preliminary Program

POSTGRADUATE COURSE IN ALLERGY
March 17-18, 1957

ADVANCED POSTGRADUATE COURSE IN ALLERGY
March 19, 1957

and

THIRTEENTH ANNUAL CONGRESS
THE AMERICAN COLLEGE OF ALLERGISTS, INC.
March 20-22, 1957

The Palmer House
Chicago, Illinois

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COMMITTEE AND BOARD MEETINGS

(To be announced)

ETHAN ALLAN BROWN, M.R.C.S. (England), L.R.C.P. (London)
Boston, Massachusetts
President, 1956-1957

Thirteenth Annual Postgraduate Course in Allergy

(Preliminary Program—subject to minor changes)

SATURDAY, MARCH 16, 1957

Afternoon Registration

3:00—Registration

SUNDAY, MARCH 17, 1957

Morning Session—Empire Room

8:00—Registration

8:55—Introduction and Announcements

9:00—The History and Critical Evaluation of Allergy in Medicine

M. MURRAY PESHKIN, M.D., Clinical Professor of Medicine and Pediatrics for Allergy, Albert Einstein College of Medicine, Yeshiva University; Consulting Allergist, Mount Sinai Hospital, New York, New York

ALLERGY OF THE NOSE

Chairman: HUGH A. KUHN, M.D., Hammond, Indiana
Co-Chairman: FREDERICK D. DROEGE, M.D., Sarasota, Florida

9:30—Specific Causes of Nasal Allergy

NATHAN SCHAFFER, M.D., Chief of Allergy, Orange Memorial Hospital, Orange, New Jersey; Chief of Allergy, East Orange General Hospital, East Orange, New Jersey

10:00—Immediate and Delayed Effects of Nasal Allergy

FRENCH K. HANSEL, M.D., Associate Professor of Clinical Otolaryngology, Washington University; Chief of Allergy Service, DePaul Hospital; Saint Louis, Missouri

10:30—Clinical Susceptibility to Hydrocarbons, Tobacco, and Physical Agents

THERON G. RANDOLPH, M.D., Chicago, Illinois

11:00—Local Treatment in Nasal Allergy and in Complicating Sinus Infection

KENNETH L. CRAFT, M.D., Assistant Professor, Department of Otolaryngology, Indiana University School of Medicine; Vice Chairman, Section on Laryngology, Otology, and Rhinology, American Medical Association, Indianapolis, Indiana

11:30—Systemic Treatment of Nasal Allergy

JOHNNY A. BLUE, M.D., Instructor in Medicine and Allergy and Head of Out-patient Allergy Clinic, Oklahoma University Medical School, University and Crippled Children's Hospital, Oklahoma City, Oklahoma

SUNDAY, MARCH 17, 1957
DEMONSTRATION

12:30 p.m.

Room to be announced

OFFICE AND LABORATORY PROCEDURES IN ALLERGY

Use of positive pressure apparatus
Use of nebulizers
Determination of vital capacity

STEPHEN D. LOCKEY, M.D., Chief, Department of Allergy, Lancaster General Hospital, Lancaster, Pennsylvania
SARAH R. LANDIS, Technologist

SUNDAY, MARCH 17, 1957

Afternoon Session—Red Lacquer Room

ALLERGY OF THE SKIN

Chairman: STEPHAN EPSTEIN, M.D., Marshfield, Wisconsin
Co-Chairman: A. ROSTENBERG, JR., M.D., Chicago, Illinois

2:00—The Meaning of the Label "The Allergic Dermatoses"
ADOLPH ROSTENBERG, JR., M.D., Professor of Dermatology, University of Illinois College of Medicine, Chicago, Illinois

2:30—Characteristics of Atopic Dermatitis in Adults
MICHAEL EBERT, M.D., Emeritus Clinical Professor of Dermatology, University of Illinois Medical School, Chicago, Illinois

2:50—Characteristics of Atopic Dermatitis in Children
JEROME GLASER, M.D., Assistant Professor of Pediatrics, The University of Rochester School of Medicine and Dentistry; Pediatrician-in-Chief, Genesee Hospital, Rochester, New York

3:10—Characteristics of Contact Dermatitis
MATTHEW J. BRUNNER, M.D., Assistant Professor of Dermatology, Northwestern University Medical College, Chicago, Illinois

3:30—Skin Tests and Desensitization in Dermatitis
STEPHAN EPSTEIN, M.D., Department of Dermatology, Marshfield Clinic, Marshfield, Wisconsin

4:00—The Local Treatment of Dermatologic Allergy
JOHN B. HAEBERLIN, JR., M.D., Clinical Assistant Professor of Dermatology, University of Illinois, Chicago, Illinois

4:20—Systemic Treatment of Dermatologic Allergy
ROBERT R. KIERLAND, M.D., Associate Professor of Dermatology and Syphilology, University of Minnesota Graduate School (Mayo Foundation) Rochester, Minnesota

4:40—Psychosomatic Aspects of Dermatologic Allergy
HAROLD A. ABRAMSON, M.D., Associate Attending Physician for Allergy, The Mount Sinai Hospital, New York, New York; Research Psychiatrist, The Biological Laboratory, Cold Spring Harbor, Long Island, New York

MONDAY, MARCH 18, 1957

Morning Session—Red Lacquer Room

ALLERGY OF THE LUNG

Chairman: MORRIS A. KAPLAN, M.D., Chicago, Illinois
Co-Chairman: VINCENT J. DERBES, M.D., New Orleans, Louisiana

9:00—Introduction to the Subject of Bronchial Asthma

NATHAN E. SILBERT, M.D., Lynn, Massachusetts. Chief of Allergy, Captain John Adams Hospital, Lawrence Quigley Memorial Hospital, and Soldiers' Home, Chelsea, Massachusetts

9:20—Pulmonary Conditions Which May Simulate Asthma

MEYER R. LICHTENSTEIN, M.D., Medical Director, City of Chicago Municipal Tuberculosis Sanitarium, Chicago, Illinois

9:40—Inhalant Allergens

MERLE W. MOORE, M.D., Associate Clinical Professor of Medicine, Head of Division of Allergy, University of Oregon Medical School, Portland, Oregon

10:00—Drug Allergy (as affecting the Respiratory Tract)

DAVID R. THOMAS, JR., M.D., Clinical Professor of Medicine, Medical College of Georgia, Visiting Physician, University Hospital, Augusta, Georgia

10:20—Bronchoscopy in Bronchial Asthma

PAUL H. HOLINGER, M.D., Professor of Bronchoesophagology, Department of Otolaryngology, University of Illinois College of Medicine, Chicago, Illinois

10:40—Aerosol and Oral Treatment of Bronchial Asthma

ALLAN HURST, M.D., Assistant Clinical Professor of Medicine, University of Colorado School of Medicine; Attending Physician, Children's Hospital, Chief of the Chest Department, Denver, Colorado

11:05—Systemic Treatment of Bronchial Asthma

GILES A. KOELSCHE, M.D., Assistant Professor, Mayo Foundation, University of Minnesota, Rochester, Minnesota

11:35—Rehabilitation and Restoration of Physiologic Functions of the Asthmatic Patient

EDWIN R. LEVINE, M.D., Assistant Clinical Professor of Medicine, Chicago Medical School; Chief of Chest Service, Fox River and Edgewater Hospitals, Chicago, Illinois

MONDAY, MARCH 18, 1957

DEMONSTRATION

12:30 p.m.

Room to be announced

OFFICE AND LABORATORY PROCEDURES IN ALLERGY

Demonstration of Patch Testing with Plant Oleoresins
Stereo Pictures of the Common Hay Fever Weeds
Charts Illustrating Geographical Distribution of Allergenic Plants

GRACE TALBOTT, M.D., San Francisco, California

MONDAY, MARCH 18, 1957

Afternoon Session—Red Lacquer Room

MISCELLANEOUS ALLERGY

Chairman: MERLE W. MOORE, M.D., Portland, Oregon

Co-Chairman: J. WARRICK THOMAS, M.D., Richmond, Virginia

2:00—Allergy in Children vs. Allergy in Adults

CECIL COLLINS-WILLIAMS, M.D., Director Allergy Clinic, Hospital for Sick Children, Toronto, Canada

2:30—Urticaria, Acute and Chronic

MILTON J. STEINHARDT, M.D., Instructor Wayne University Medical School; Allergy Staff, Grace and Sinai Hospitals, Detroit, Michigan

2:50—Drug Allergy (excluding the Respiratory Tract)

MAYER A. GREEN, M.D., Senior Physician, Chief of Department of Allergy, Columbia Hospital; Allergist, Department of Dermatology, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania

3:10—Gastrointestinal Allergy

PHILIP M. GOTTLIEB, M.D., Associate in Medicine, University of Pennsylvania School of Medicine; Chief Allergist, Sidney Hillman Medical Center; Chief Allergist, Kensington Hospital, Philadelphia, Pennsylvania

3:40—Allergy of the Eye

HOWARD C. LEOPOLD, M.D., Assistant in Medicine, Jefferson Medical College, and Clinical Assistant, Department of Allergy, Jefferson Medical College Hospital, Philadelphia, Pennsylvania

4:10—Allergy Due to Insects

RICHARD L. ETTER, M.D., Instructor in Clinical Medicine, Baylor University College of Medicine; Attending Physician, Hermann Hospital Allergy Clinic, Houston, Texas

4:30—Headache—Practical Aspects

HENRY D. OGDEN, M.D., Clinical Assistant Professor, Department of Medicine, Louisiana State University School of Medicine, New Orleans, Louisiana

5:00—Food Allergy

ORVAL R. WITHERS, M.D., Kansas City, Missouri, Head of Allergy Clinic, Associate Clinical Professor of Medicine, University of Kansas School of Medicine, Kansas City, Kansas

5:30—The Future of Allergy

BRET RATNER, M.D., Professor of Clinical Pediatrics, Director of Pediatric Allergy, New York Medical College, New York, New York

7:00—Informal Buffet Supper (Small discussion groups with individual instructors)

The fee for the Instructional Course is $50 for nonmembers for three days. This includes the Buffet Supper. For Fellows and Associate Fellows the fee is $20, which does NOT include the Buffet Supper. The fee for the third day alone is $10, for those Fellows and non-Fellows who have not taken the entire course. Tickets for the Buffet Supper may be purchased separately for $6.50 at the Registration Desk until 2:00 p.m., Monday, March 18.

Advanced Postgraduate Course in Allergy

TUESDAY, MARCH 19, 1957

Morning Session—Red Lacquer Room

THE ALLERGIC MECHANISMS

Chairman: HAROLD A. ABRAMSON, M.D., New York, New York
Co-Chairman: GILES A. KOELSCHE, M.D., Rochester, Minnesota

9:30—Histamine
RICHARD W. SCHAYER, PH.D., Head, Biochemistry Section, Rheumatic Fever Research Institute, Chicago, Illinois

10:00—Protease Activation Theory of Allergy
KENNETH L. BURDON, PH.D., Professor and Chairman of the Department of Microbiology, Baylor University College of Medicine, Texas Medical Center, Houston, Texas

10:30—Mechanism of Serum Sickness
BRET RATNER, M.D., Professor of Clinical Pediatrics, Director of Pediatric Allergy, New York Medical College, New York, New York

11:00—Enzymatic Mechanisms in Allergy
GEORGE UNGER, M.D., Director of Pharmacology, U. S. Vitamin Corporation, Yonkers, New York

11:30—Allergy and Diffuse Collagen Diseases
N. G. B. MCLETCHIE, M.D., formerly Professor of Pathology, Dalhousie University, presently Pathologist, Laconia Hospital; Laconia, New Hampshire

12:00—Reaction of Living Tissue to Any Specific Allergen
J. G. MCDONALD, M.D., Boulder Medical Center, Boulder, Colorado

DEMONSTRATION

12:30 p.m.

Club Lounge

MOLDS. A PRACTICAL DEMONSTRATION

Methods of culture, their preservation and storage. Methods of identification and extraction. Their importance in hyposensitization.

NATHAN SCHAFFER, M.D., East Orange, New Jersey
HOMER E. PRINCE, M.D., Houston, Texas

TUESDAY, MARCH 19, 1957

Afternoon Session—Red Lacquer Room

Chairman: PHILIP M. GOTTLIEB, M.D., Philadelphia, Pennsylvania
Co-Chairman: LEON UNGER, M.D., Chicago, Illinois

THE ALLERGIC MECHANISMS

2:00—The Mechanism of Antibody-Antigen Reaction and its Application to the Allergic State
VICTOR A. NAJJAR, M.D., Associate Professor of Pediatrics, The Johns Hopkins Hospital, Baltimore, Maryland

2:30—Delayed Hypersensitivity
ADOLPH ROSTENBERG, JR., M.D., Professor of Dermatology, University of Illinois College of Medicine, Chicago, Illinois

3:00—Acetylcholine

MAX SAMTER, M.D., Associate Professor of Medicine (Allergy); Head, Allergy Clinic, University of Illinois, College of Medicine, Chicago, Illinois

3:30—Auto-Immune Mechanisms

ISRAEL DAVIDSOHN, M.D., Professor and Chairman, Department of Pathology, Chicago Medical School; Director, Mount Sinai Medical Research Foundation, Chicago, Illinois

4:00—Anergy in Allergy

KURT STERN, M.D., Associate Professor of Pathology, Department of Pathology, Chicago Medical School; Assistant Director, Mount Sinai Medical Research Foundation, Chicago, Illinois

4:30—Radio-Isotopes in Allergy

DAVID TALMAGE, M.D., Assistant Professor of Medicine, Director of Allergy Research, University of Illinois; Ogden Graduate School of Medicine, Chicago, Illinois

5:00—Steroid and Hormonal Influences in Allergy

RACHMIEL LEVINE, M.D., Chairman, Department of Medicine, Michael Reese Hospital; Director, Department of Metabolism and Endocrine Research, Michael Reese Hospital, Chicago, Illinois

5:30—Motion Picture—"Anaphylaxis and Allergy"

PROFESSOR PASTEUR VALLERY-RADOT, and DOCTOR BERNARD N. HALPERN, Hospital Broussais, Paris, France. (Color, 16 mm, 50 Minutes, sound, in English)

(In the time allotted each speaker, allowance has been made for presentation of subject and for discussion. The chairman will not permit any speaker to go over his total allotted time. If all of the time given is not used, discussion will be permitted. Extended discussion beyond the allotted time is at the discretion of the chairman and depends on how closely the schedule is being adhered to. If a speaker does not use all of his time, discussion will be permitted until the time at which the next paper is to be presented. It was felt by the Program Committee that this method would give the maximum time to all those presenting papers at the General Session.)

STEREO PICTURE PRESENTATION—DEMONSTRATION OF PATCH TESTING

7:00-9:00 p.m.

Club Lounge

PATCH TESTING WITH PLANT OLEORESINS, THE COMMON HAY FEVER WEEDS, AND CHARTS ILLUSTRATING THE DISTRIBUTION OF EACH

MR. HUGH GRAHAM, The Hugh Graham Company, Dallas, Texas

Thirteenth Annual Congress

WEDNESDAY, MARCH 20, 1957

Morning Session—Grand Ballroom

GENERAL SCIENTIFIC SESSION

Chairman: HAL M. DAVISON, M.D., Atlanta, Georgia

Co-Chairman: JAMES A. MANSMANN, M.D., Pittsburgh, Pennsylvania

9:00—Extra Respiratory Tract Symptoms of Pollinosis
MERLE W. MOORE, M.D., Portland, Oregon

9:20—Clinical Evaluation of Sandostene in the Treatment of Bronchial Asthma
MORRIS A. KAPLAN, M.D., and L. LA MANTIA, M.D., Chicago, Illinois

9:40—An Experimental Analysis of the Inflammatory Components of the Allergic Skin Test Reaction
GERBERT REBELL, M.D., ALAN J. STANLEY, M.D., JOHNNY A. BLUE, M.D., and GEORGE L. WINN, M.D., Oklahoma City, Oklahoma

10:00—Physiological Studies with Medihaler-Isoproterenol in Patients with Bronchial Asthma
MERRILL M. GOLDSTEIN, M.D., and ERNEST O. ATTINGER, M.D., Boston, Massachusetts

10:20—RECESS TO VISIT EXHIBITS

10:35—Allergy and Submarine Medicine
NORMAN W. CLEIN, M.D., Seattle, Washington

10:55—A New Non-Narcotic Antitussive Drug
S. WILLIAM SIMON, M.D., Dayton, Ohio

11:15—The Specific Adaptation Syndrome
THERON G. RANDOLPH, M.D., Chicago, Illinois

11:35—Non-Histaminic Cephalalgia
LEON UNGER, M.D., Chicago, Illinois

11:55—The Allergic Aspects of Bronchiectasis
STANLEY L. GOLDMAN, M.D., Kansas City, Missouri

(In the time allotted each speaker, allowance has been made for presentation of subject and for discussion. The chairman will not permit any speaker to go over his total allotted time. If all of the time given is not used, discussion will be permitted. Extended discussion beyond the allotted time is at the discretion of the chairman and depends on how closely the schedule is being adhered to. If a speaker does not use all of his time, discussion will be permitted until the time at which the next paper is to be presented. It was felt by the Program Committee that this method would give the maximum time to all those presenting papers at the General Session.)

12:30—Botany of Allergy
EDWARD P. CLAUS, PH.D., Big Rapids, Michigan

WEDNESDAY, MARCH 20, 1957

Afternoon Session—Grand Ballroom

GENERAL SCIENTIFIC SESSION

Chairman: ALFRED J. WEIL, M.D., Pearl River, New York
Co-Chairman: CECIL M. KOHN, M.D., Kansas City, Missouri

2:00—Recent Advances in the Understanding and Treatment of Pulmonary Insufficiency
ALLAN HURST, M.D., Denver, Colorado

2:20—Local Serum Sickness and the Evolution of the Delayed and Immediate Allergic Skin Reaction
BRET RATNER, M.D., and ROBERT FELDMAN, M.D., New York, New York, and LLOYD V. CRAWFORD, M.D., Memphis, Tennessee

2:40—The Sensitivity of Human Leukocytes to Old Tuberculin
MORRIS SCHERAGO, D.V.M., and H. E. HALL, M.S., Lexington, Kentucky

3:00—Electrophoretic Patterns in the Hypersensitive State
JAMES E. STROH, M.D., Seattle, Washington

3:20—Clinical Hypersensitivity to Poliomyelitis Vaccine
S. H. JAROS, M.D., Harlingen, Texas

3:40—RECESS TO VISIT EXHIBITS

4:00—Acute Drug Allergy Due to the Barbiturate Fraction of Reducing Pills
BERNARD M. ZUSSMAN, M.D., Memphis, Tennessee

4:20—Pediatric Allergy—Its Role in Preventive Pediatrics
MAURICE M. HILLMAN, M.D., New Haven, Conecticut

4:40—Gel Diffusion
ROGER P. WODEHOUSE, PH.D., Pearl River, New York

5:00—Inhalant Allergy in Infants
BENJAMIN J. WOOD, M.D., and DONALD WALKER, M.D., Sharon, Pennsylvania

5:20—Some Allergy Problems Related to Dentistry
J. WARRICK THOMAS, M.D., and HAROLD M. SYROP, D.D.S., Richmond, Virginia

(In the time allotted each speaker, allowance has been made for presentation of subject and for discussion. The chairman will not permit any speaker to go over his total allotted time. If all of the time given is not used, discussion will be permitted. Extended discussion beyond the allotted time is at the discretion of the chairman and depends on how closely the schedule is being adhered to. If a speaker does not use all of his time, discussion will be permitted until the time at which the next paper is to be presented. It was felt by the Program Committee that this method would give the maximum time to all those presenting papers at the General Session.)

WEDNESDAY, MARCH 20, 1957

12:30 p.m.—Botany of Allergy
EDWARD P. CLAUS, PH.D., Pittsburgh, Pennsylvania

LABORATORY EXERCISES

Room to be announced

7:00-9:00 p.m.—A brief explanation highlighting the main points of the afternoon lecture

Microscopic recognition of individual KNOWN types of pollens on especially prepared greased slides.

Microscopic identification of mixtures of KNOWN types of pollens on prepared greased slides.

Techniques employed in determining atmospheric pollen counts.

Microscopic observation of mold cultures in Petri dishes.

Microscopic examination of mold growths in Henrici culture slides.

EDWARD P. CLAUS, PH.D., Pittsburgh, Pennsylvania

Evening Session—Room to be announced

8:00-10:00 p.m.—THE ASSOCIATION OF ALLERGISTS FOR MYCOLOGICAL INVESTIGATIONS, INC.

President: HOMER E. PRINCE, M.D., Houston, Texas

Secretary-Treasurer: SIM HULSEY, M.D., Fort Worth, Texas

The scientific meeting of the Association of Allergists for Mycological Investigations, Inc., will consist of papers covering various problems currently under investigation, as well as an informal Question and Answer period.

All physicians interested in mold allergy are invited to attend and take part in the discussions.

TECHNICAL AND SCIENTIFIC EXHIBITS

During the midmorning and midafternoon of each of the three days of the scientific program, time has been allotted for visiting the exhibits. The chairmen presiding at the morning and afternoon sessions are instructed to call a recess at the times indicated on the program. In addition, at the close of each day's session, chairmen will again invite registrants to visit the booths of our exhibitors. This is a courtesy we must extend, for without the technical exhibitors it would be impossible to finance such a meeting as ours.

You will find these technical and scientific exhibits worthy of your time and interest. The representatives in charge of the individual exhibits will be pleased to receive any suggestions or comments you choose to make. Many of these exhibitors are advertisers in the ANNALS OF ALLERGY and/or Sustaining Members of The American College of Allergists.

Your cooperation in showing our appreciation to the technical and scientific exhibitors is most earnestly requested.

THURSDAY, MARCH 21, 1957

Morning Session—Grand Ballroom

PAPERS OF ASSOCIATE FELLOWS

Chairman: S. H. JAROS, M.D., Harlingen, Texas
Co-Chairman: JAMES E. STROH, M.D., Seattle, Washington

9:00—The Use of Jewel-Weed in the Treatment of Rhus Dermatitis
ROGER A. LIPTON, M.D., Brooklyn, New York

9:10—Acrodermatitis Enteropathica (Danbolt-Closs) in Five Siblings
JAMES S. VEDDER, M.D., Marshfield, Wisconsin, with the assistance of SYLVIA GRIEM, M.D., Department of Pediatrics, Marshfield, Clinic, Marshfield, Wisconsin

9:20—Skin Reactivity in the Hypersensitivity Syndrome of a Mouse
I. A. PARFENTJEV, PH.D., Research Associate, Department of Microbiology, Yale University School of Medicine, New Haven, Connecticut

9:35—Rhinologic Factors to be Considered in the Treatment of Nasal Allergy
JACK R. ANDERSON, M.D., Chief of Otolaryngology, Independent Unit, Charity Hospital of Louisiana, and Director of the Ear, Nose and Throat Allergy Clinic, New Orleans Eye, Ear, Nose and Throat Hospital, New Orleans, Louisiana

9:55—A Study of a New Diagnostic Method in Allergic Disease
RITA L. DON, M.D., and L. O. DUTTON, M.D., El Paso, Texas

10:05—A Contribution to the Treatment of Nose Drop Addiction
EDWARD C. BRESSLER, M.D., Captain (MC) U. S. Army Hospital Fort Chaffee, Arkansas

10:15—Endolymphatic Hydrops
E. R. ANDERSON, M.D., Warren, Pennsylvania

10:25—Allergy as a Cause of Genitourinary Symptoms
CLYDE K. WALTER, M.D., Canfield, Ohio

10:35—Severe Allergic Reactions to Pignola Nut
INEZ MARIA SANTOS, M.D., and LEON UNGER, M.D., Assistant Professor, Northwestern University School of Medicine; Attending Physician, Cook County Hospital, Chicago, Illinois

10:55—Intractable Asthma Caused by Aspiration of Cork from Nebulizer
JAMES H. JOHNSON, M.D., Clinical Assistant in Medicine, Northwestern University Medical School; and LEON UNGER, M.D., Assistant Professor, Northwestern University School of Medicine; Attending Physician, Cook County Hospital, Chicago, Illinois

11:15—RECESS TO VISIT EXHIBITS

11:25—Bilateral Wheezing from an Aspirated Vegetable (Peanut) Foreign Body

AMPARA BUENAVENTURA, M.D., Resident in Medicine, Wesley Memorial Hospital, Chicago, Illinois; and LEON UNGER, M.D., Assistant Professor, Northwestern University School of Medicine; Attending Physician, Cook County Hospital, Chicago, Illinois

THURSDAY, MARCH 21, 1957

Morning Session—Grand Ballroom

PAPERS OF ASSOCIATE FELLOWS

11:35—Does Honey In Infant Feeding Cause Allergy?

EDWARD L. STREM, M.D., St. Paul, Minnesota, and ALBERT V. STOESSER, M.D., Minneapolis, Minnesota

11:45—Animal Protein Allergies in Immunization Procedures and Effective Substitute Measures

ALBERT ZUCKER, M.D., and ALDO FLORIO, M.D., Bronx, New York

11:55—Anaphylactoid Reactions to Sodium Dehydrocholate

DONALD UNGER, M.D., Chicago, Illinois

12:05 p.m.—Experience with Non-Flushing Histamine Treatment of Foreign Protein Type Reactions

CLARENCE C. COHRS, M.D., Allergist, Woodland Hospital and Clinic, Moberly, Missouri

12:15 p.m.—Hidden Sensitivities of Medical Patients

C. RICHARD AHROON, JR., M.D., Bloomington, Illinois

(In the time allotted each speaker, allowance has been made for presentation of subject and for discussion. The chairman will not permit any speaker to go over his total allotted time. If all of the time given is not used, discussion will be permitted. Extended discussion beyond the allotted time is at the discretion of the chairman and depends on how closely the schedule is being adhered to. If a speaker does not use all of his time, discussion will be permitted until the time at which the next paper is to be presented. It was felt by the Program Committee that this method would give the maximum time to all those presenting papers at the General Session).

THURSDAY, MARCH 21, 1957

DEMONSTRATION

12:30 p.m.

Room to be announced

MISCELLANEOUS OFFICE PROCEDURES

Application of scratch tests
Nasal smears, eye smears
Dilution of extracts
Use of multiple pollen extracts:
Advantages and disadvantages
of placing in one vial

STEPHEN D. LOCKEY, M.D., Chief, Department of Allergy,
Lancaster General Hospital, Lancaster, Pennsylvania
SARAH R. LANDIS, Technologist

THURSDAY, MARCH 21, 1957

Afternoon Session—Grand Ballroom

Chairman: LAWRENCE J. HALPIN, M.D., Cedar Rapids, Iowa

Co-Chairman: HOMER E. PRINCE, M.D., Houston, Texas

2:00—Allergy in the Future

CARL E. ARBESMAN, M.D., Assistant Clinical Professor of Medicine, University of Buffalo School of Medicine; Chief Allergy Clinic Buffalo General Hospital; and Director of Allergy, Research Laboratory, Buffalo General Hospital; President, American Academy of Allergy, Buffalo, New York

2:30—A Physiologist's Concept of the Hypersensitive State

Guest Speaker

CHARLES F. CODE, M.D.*
Mayo Clinic, Rochester, Minnesota

3:30—Bela Schick and Von Pirquet Awards

4:00—RECESS TO VISIT EXHIBITS

4:15—Presidential Address

ETHAN ALLEN BROWN, M.R.C.S. (Eng.), and L.R.C.P. (Lond.), Boston, Massachusetts

—Introduction of ORVAL R. WITHERS, M.D., President-Elect, Kansas City, Missouri

—Regular Business Meeting

6:30—Cocktail Party (Courtesy, The Schering Corporation) Grand Ballroom Foyer

8:00—Banquet (Wines, Courtesy of the Nepera Chemical Company)

*By invitation

FRIDAY, MARCH 22, 1957

Morning Session—Room to be announced

DERMATOLOGIC ALLERGY SESSION

Chairman: MAURICE C. BARNES, M.D., Waco, Texas
(Co-Chairman to be announced)

9:00—"Id Eruptions"
STANLEY E. HUFF, M.D., Associate in Dermatology, Northwestern Medical School, Chicago, Illinois

9:30—The Morphologic and Diagnostic Aspects of Cutaneous Drug Reactions
JAMES R. WEBSTER, M.D., Professor of Dermatology, Northwestern University Medical School, Chicago, Illinois

10:00—Bacterial, Pollen and Food Allergy in Relation to Skin Disease
GEORGE CLINTON ANDRES, M.D., Clinical Professor of Dermatology, College of Physicians and Surgeons, Columbia University, New York, New York

10:30—The Relationship of Primary Irritation to Eczematous Sensitization
ADOLPH ROSTENBERG, JR., M.D., Associate Professor of Dermatology and Associate Director of the Allergy Unit, Illinois College of Medicine, Chicago, Illinois.

11:00—Title and Speaker to be announced

FRIDAY, MARCH 22, 1957

Morning Session—Room to be announced

OPHTHO-OTOLARYNGOLOGIC SESSION

Chairman: HUGH A. KUHN, M.D., Hammond, Indiana
Co-Chairman: FREDERICK DROEGE, M.D., Sarasota, Florida

9:00—Panel on Serous Otitis Media—Allergy or Infection?
BERNARD SILVERBLATT, M.D., RAYMOND E. JORDAN, M.D., ROBERT A. SCHEIN, M.D., and IRWIN A. SOLOW, M.D., Pittsburgh, Pennsylvania
(Question and Answer Period. Discussion from the floor is encouraged)

10:00—The Importance of Allergy to the Otolaryngologist
FREDERICK DROEGE, M.D., Sarasota, Florida
Discussant: Francis L. McGannon, M.D., Lakewood, Ohio

10:15—Ocular Allergy
ALSON E. BRALEY, M.D., Iowa City, Iowa
Discussants: JOHN G. BELLOWS, M.D., Chicago, Illinois, and FRANK W. NEWELL, M.D., Chicago, Illinois

11:00—Pediatric Allergy
LAWRENCE S. CRISPELL, M.D., Joplin, Missouri

11:30—The Management of Complications of Allergic Rhinitis
EDLEY H. JONES, M.D., Vicksburg, Mississippi
Discussants: DURWARD A. SKINNER, M.D., Newark, Ohio, and EDUARDO R. PEREZ, M.D., Guayama, Puerto Rico

FRIDAY, MARCH 22, 1957

Afternoon Session—Room to be announced

PEDIATRIC ALLERGY SESSION

Chairman: HOWARD G. RAPAPORT, M.D., New York, New York
Co-Chairman: EDWARD SCOTT O'KEEFE, M.D., Lynn, Massachusetts

12:30—Pediatric Allergy Luncheon

Subject: **Untoward Reactions to Treatment with Adrenal Steroids**

Guest Speakers: ROBERT A. GOOD, M.D., American Legion Memorial Heart Research, Professor of Pediatrics, University of Minnesota Medical School; and ROBERT L. VERNIER, M.D., United States Public Health Service Research Fellow, Minneapolis, Minnesota

2:00—The Pros and Cons of Early Treatment of Allergic Infants

FANNIE LOU LENEY, M.D., Oklahoma City, Oklahoma

2:15—Inhalant Allergy in Infants

DONALD WALKER, M.D., and BENJAMIN WOOD, M.D., Department of Otolaryngology and Pediatrics, Sharon General Hospital, Sharon, Pennsylvania

2:30—Observations of Plasma and Urinary Steroid Levels Following the Administration of Zinc and Gel ACTH

SHELDON C. SIEGEL, M.D., BAILEY J. LOVIN, M.D., ROBERT E. SMITH, M.D., and ROBERT ELY, M.D., Los Angeles, California (Paper presented by Dr. Siegel)

2:45—Electroencephalography in Allergic Children

BERNARD A. BERMAN, M.D., Boston, Massachusetts, and JEROME GLASER, M.D., Rochester, New York (Paper presented by Dr. Berman)

3:00—Unusual Occurrence of Homologous Serum Hepatitis Following Passive Transfer Studies

PAUL F. DEGARA, M.D., New York, New York

3:15—Death in Intractable Asthma

HAROLD TUFT, M.D., Jewish National Home for Asthmatic Children, Denver, Colorado; and M. MURRAY PESHKIN, M.D., New York, New York (Paper presented by Dr. Tuft)

3:30—RECESS TO VISIT EXHIBITS. Coffee, Courtesy of Prescription Products Division, The Borden Company

3:45—Panel Discussion: The Pollen Allergy Prophylaxis Problem

HOMER E. PRINCE, M.D., Houston, Texas, *Moderator;* LAWRENCE J. HALPIN, M.D., Cedar Rapids, Iowa; EDWARD SCOTT O'KEEFE, M.D., Lynn, Massachusetts; SAMUEL J. LEVIN, M.D., Detroit, Michigan, and MORRIS A. KAPLAN, M.D., Chicago, Illinois

FRIDAY, MARCH 22, 1957

Afternoon Session—Room to be announced

PSYCHOSOMATIC SESSION

Chairman: BENNETT KRAFT, M.D., Indianapolis, Indiana
Co-Chairman: JOHN MITCHELL, M.D., Columbus, Ohio

2:00—Emotional Factors in Atopic Dermatitis

JOHN MITCHELL, M.D., Clinical Professor of Medicine, Ohio State University College of Medicine, Columbus, Ohio

2:20—A Simultaneous Multidisciplinary Study of a Patient with Bronchial Asthma

BENNETT KRAFT, M.D., Chief of Allergy Clinic, Indianapolis General Hospital; and DAVID BLUMENTHAL, M.S.W.*, Indianapolis, Indiana

2:40—A Case of Urticaria. The Skin as an Organ for the Expression of Feeling

MILTON STEINHARDT, M.D., Clinical Instructor, Wayne Medical School, Detroit, Michigan

3:00—RECESS TO VISIT EXHIBITS

3:15—Psychology and Psychophysiology of Itching

JOSEPH KEPECS, M.D.,* Attending Physician, Michael Reese Hospital; and MILTON ROBIN, M.D.,* Assistant Professor of Dermatology, University of Illinois, Chicago, Illinois

3:40—Experimental and Clinical Asthma in Man During Psychoanalytic Therapy. I. Pulmonary Physiologic Studies

HAROLD A. ABRAMSON, M.D., Associate Physician and Chief, Allergy Clinic, The Mount Sinai Hospital; M. MURRAY PESHKIN, M.D., Consulting Allergist, The Mount Sinai Hospital; M. R. KAUFMAN, M.D., and L. ROOSE, M.D., New York, New York

*By invitation

FRIDAY, MARCH 22, 1957

Afternoon Session—Room to be announced

TECHNOLOGY SESSION

Chairman: STEPHEN D. LOCKEY, M.D., Lancaster, Pennsylvania

Co-Chairmen: MORRIS A. KAPLAN, M.D., and LEON UNGER, M.D., Chicago, Illinois

2:00—Methods of Testing (Scratch, Intradermal, Insufflation, Ophthalmic, Patch); Interpretation, Values, Fallacies

LEON UNGER, M.D., Chicago, Illinois

2:30—Procedures of Value in Filtering and Clearing Extracts

STEPHEN D. LOCKEY, M.D., Lancaster, Pennsylvania

2:50—Problems Occurring in the Office and Laboratory of an Allergist

Compiled by the MISSES TYBEE MEYERS, SARAH R. LANDIS and MRS. DELORES ZUCKER. (To be read by Miss Tybee Meyers)

3:10—RECESS TO VISIT EXHIBITS

3:30—Pollen Counts, Pollen Identification and Methods Employed. Practical Demonstration

EDWARD P. CLAUS, PH.D., Dean and Professor of Pharmacognosy, Division of Pharmacy, Ferris Institute, Big Rapids, Michigan.

4:30—Conference Panel of Speakers

(Question and Answer Period.)

SATURDAY, MARCH 23, 1957

INSTRUCTIONAL COURSE ON MOLD ALLERGY

Presented by
The Association of Allergists for Mycological Investigations, Inc.
Chicago Medical School, Chicago, Illinois

9:00—Registration and Assignment of Sections
SIM HULSEY, M.D., Fort Worth, Texas

9:20—Introduction: What is Mold Allergy?
HOMER E. PRINCE, M.D., Houston, Texas

9:30—Seasonal, Perennial and Environmental Molds
NATHAN SCHAFFER, M.D., East Orange, New Jersey

10:10—What Molds Do I Need and How Will I Get Them?
GRACE TALBOTT, M.D., San Francisco, California

10:40—Mold Avoidance—Practical Advice for Mold-Sensitive Patients
D. J. PARSONS, M.D., Springfield, Ohio

11:15—RECESS

11:30—Skin Testing with Mold Extracts
WILLIAM H. BROWNING, M.D., Shreveport, Louisiana

12:00—Treatment with Mold Extracts
HOMER E. PRINCE, M.D., Houston, Texas

12:30—LUNCH

1:30—Identification of Molds
MARIE B. MORROW, Ph.D., Austin, Texas
(Note: For the following two presentations the class will be divided into Sections A and B.)

LABORATORY DEMONSTRATIONS

MARIE B. MORROW, Ph.D., Austin, Texas
GEORGE MEYER, M.A., Austin, Texas

2:00—Section A

2:30—Section B

CLINICAL CONFERENCES WITH MOLD-SENSITIVE PATIENTS

MORRIS KAPLAN, M.D., Chicago, Illinois

2:00—Section B

2:30—Section A

3:00—QUESTION AND ANSWER PERIOD
All instructors participating

A registration fee of $25 will be charged for this course. Preregistration is suggested, as enrollment will be limited. Address applications to The Association of Allergists for Mycological Investigations, Inc., Homer E. Prince, M.D., President, 808 Caroline Street, Houston 2, Texas.

Women's Auxiliary

TUESDAY, MARCH 19, 1957

11:30 a.m.—Luncheon and Tour of the Merchandise Mart

WEDNESDAY, MARCH 20, 1957

9:00 a.m.— Registration

10:00 a.m.—Third Annual Business Meeting of the Women's Auxiliary of The American College of Allergists, Inc.

12:00 m. —Luncheon at the Palmer House

Guest of Honor: HOMER E. PRINCE, M.D., Past President, The American College of Allergists; President, Association of Allergists for Mycological Investigations, Inc.

3:00 p.m.—Tea, coffee and cookies will be served in the Hospitality Room to all College members and their wives. (Courtesy of the Chicago Allergy Society)

THURSDAY, MARCH 21, 1957

Luncheon and Fashion Show (time and place to be announced)

3:00 p.m.—Tea, coffee and cookies will be served in the Hospitality Room to all College members and their wives. (Courtesy of the Chicago Allergy Society)

FRIDAY, MARCH 22, 1957

10:30 a.m.—A visit to the Prudential Building. It is worth a trip to Chicago to see this newest and most glamorous edifice. From the Observation Deck, a panorama of Chicago and the states surrounding it can be seen.

TECHNICAL EXHIBITS

Booth		
49	Almay Division, Schieffelin & Co.	New York, New York
54	Ar-Ex Products Co.	Chicago, Illinois
8	Barry Laboratories, Inc.	Detroit, Michigan
5	Better Bedding Co.	Chicago, Illinois
53	Bilhuber-Knoll Copp.	Orange, New Jersey
45	Borden Company	New York, New York
39	Brewer & Co., Inc.	Worcester, Massachusetts
15	Burroughs Wellcome & Co.	Tuckahoe, New York
20	Center Laboratories	Port Washington, New York
2	Chicago Dietetic Supply House	Chicago, Illinois
32	Ciba Pharmaceutical Products, Inc.	Summit, New Jersey
44	Coca-Cola Company	Atlanta, Georgia
42	Desitin Chemical Co.	Providence, Rhode Island
21	DeVilbiss Company	Somerset, Pennsylvania
22	Doho Chemical Corporation	New York, New York
10	Dome Chemicals, Inc.	New York, New York
46	Eisele & Company	Nashville, Tennessee
43	Encyclopaedia Britannica	Chicago, Illinois
38	Endo Laboratories	Richmond Hill, New York
40	Gerber Products Company	Fremont, Michigan
6	Hugh Graham Company	Dallas, Texas
3	Hollister-Stier Laboratories	Philadelphia, Pennsylvania
48	Jackson-Mitchell Pharmaceuticals, Inc.	Culver City, California
47	Eli Lilly and Company	Indianapolis, Indiana
23	Loma Linda Company	Arlington, California
41	Luzier's, Incorporated	Kansas City, Missouri
4	Marcelle Cosmetics, Inc.	Chicago, Illinois
19	McNeil Laboratories, Inc.	Philadelphia, Pennsylvania
34	Merck Sharp & Dohme	Philadelphia, Pennsylvania
37	Organon, Inc.	Orange, New Jersey
52	Pfizer Laboratories	Brooklyn, New York
33	Ralston Purina Company	St. Louis, Missouri
55	Raytheon Manufacturing Co.	Waltham, Massachusetts
50	Riker Laroratories	Los Angeles, California
35	Sandoz Pharmaceuticals	Hanover, New Jersey
9	Schering Corporation	Bloomfield, New Jersey
7	G. D. Searle & Co.	Chicago, Illinois
31	Sherman Laboratories	Detroit, Michigan
11	Stemen Laboratories, Inc.	Oklahoma City, Oklahoma
26	Testkit Laboratories	New York, New York
56	Travenol Laboratories, Inc.	Morton Grove, Illinois
30	United States Tobacco Company	New York, New York
18	Union Pharmaceutical Co.	Bloomfield, New Jersey
51	Westwood Pharmaceuticals	Buffalo, New York

Editorials

The opinions expressed by the writers of editorials in the ANNALS *do not necessarily represent the group opinion of the Board or of the College.*

THE ASSOCIATION OF ALLERGISTS FOR MYCOLOGICAL INVESTIGATIONS, INC.

Elsewhere in this issue of the ANNALS, The Association of Allergists for Mycological Investigations, Inc., announces the inauguration of a new series of studies dedicated to discovering and assessing the importance of wood-rotting fungi in the causation and exacerbation of allergic disorders.

Participation by nonmembers of the Association is solicited in the nationwide study of this problem. Fellows and Associate Fellows of the American College of Allergists are reminded that membership in the Association is also open to those who wish to participate in this or other aspects of research in problems of mold allergy.

In these days of Ford Foundations and gifts of $500,000,000, it is refreshing to reflect upon the fact that many small groups of devoted physicians succeed at working away at questions of research perhaps not as earth-shaking as the production of a vaccine for poliomyelitis or a "cure" for cancer. There are smaller problems, nevertheless important and well worth study. One of these is undoubtedly the role of fungi as causes of allergic disease.

Blackley, in 1873, described the inhalational experiments which he performed upon himself with the spores of *Penicillium* and *Chaetomium*. The resulting symptoms were so severe that he admitted that he dared not further pursue the investigation. In 1924, van Leeuwen proved that patients, skin test-sensitive to a group of molds, were free of symptoms in a specially constructed mold-free room. During the intervening years, many investigators have, beyond doubt, proven a causative relationship between mold spores and allergic syndromes as varied as conjunctivitis, rhinitis, bronchial asthma and atopic eczema. It was something else again to make satisfactory standardizable extracts for testing and treatment purposes. The tests had to be specific and nonirritating, the treatment productive of antibodies and clinical relief.

In 1938 The Association of Allergists for Mycological Investigations, Inc., came into being with the avowed purpose of solving some of these problems. The physician-members have, out of their own pockets, contributed substantially for such investigations. Some of this money has gone to support work in mycology in the Department of Botany at The University of Texas at Austin, and part for the support of student

projects independent of and assisting in the chief research problems. A bank of pure pedigreed cultures of allergenic molds is maintained. A service of identification of locally exposed mold plates is available for members and at a moderate fee for nonmembers. Methods of culture, preparations of extracts, bioassay determination, postgraduate instructional courses, and one of the most complete nationwide surveys of the seasonal and geographical incidence of mold species represent only a small part of the activities of the group. From this group have emanated a number of scientific papers. Requests for reprints of these papers prove the international acclaim in which the Association is held.

Allergists of the United States may well be proud of the fact that an unendowed group of physicians, independent of aid from government agencies or benevolent foundations has been able to initiate and sustain major basic studies in this part of the field of allergy.

A course in mold allergy is being sponsored by the Association in Chicago following the 1957 session of the College.

OVER-THE-COUNTER DRUGS

Every so often a Fellow of the American College of Allergists writes to the Editor of the ANNALS OF ALLERGY requesting that a notice of a proposed hearing of the Food and Drug Administration for the release of a medication for over-the-counter sale be published in these pages. The ANNALS appears at intervals of two months, and only rarely can the note appear in print before the hearing has been held.

For those Fellows interested in this aspect of medicine, the following are the facts concerning the five groups of people involved.

As every physician knows, the majority of patients would prefer to get almost any medicine on an over-the-counter basis.

The drug manufacturers are also interested in the over-the-counter sales and not only take the first steps in applying for such a change in the status of the drug, but are ready to argue for it with all their available resources, their research and library staffs and skilful proponents.

The honest pharmacist is actually against the over-the-counter sale of drugs. In fact, Floyd N. Heffron, the Executive Secretary of the California State Board of Pharmacy, has suggested to the Commissioner of the Food and Drug Administration that no drug be released for such sale unless it has had ten years of clinical trial. He points out some of the inconsistencies in the present law. A pharmacist is now not permitted to dispense, without prescription, an amphetamine tablet (5 mg). Any grocer, however, may sell a bottle of nose drops, the total amphetamine content of which is 325 mg. This is a palatable preparation of amphetamine and no one can prevent the customer from using it orally for euphoric effect.

The Food and Drug Administration, representing the fourth interested group, has always acted to protect the public's health and welfare. Its

decisions are not related to political or economic issues. It demands a standard order of procedure. First, there must be an application by the drug manufacturer. Its fulfillment is neither simple nor easy. Evidence must be submitted to prove the preparation safe for self-administration under ordinary circumstances. If the staff of the Food and Drug Administration is not satisfied with the evidence, then change in status is denied. The manufacturer may resubmit his application with more satisfactory evidence, or go to court.

If the evidence appears sufficient for a change in status, there is another check and balance. In the *Federal Register* is published the proposal. This lists the conditions which the preparation must fulfill in order to change its status, and sets the date for a hearing. The more important of such hearings are listed in the *Journal of the American Medical Association* under the News Section for Washington, D. C.

If the Commissioner is satisfied as to safety, the final attesting order is also printed in the *Federal Register*. If decision is difficult, a public hearing is held in order that additional facts may be presented, and a final decision may be reached. Either an affirmative or negative decision may be challenged through court procedures.

The law involved is the Durham-Humphrey Amendment to the Food, Drug and Cosmetic Act. If the drug is considered unsafe for use unless its administration is supervised by a physician, it is mandatory that it be sold with the label, "Caution: Federal Law prohibits dispensing without prescription." If the drug can be used for self-medication and requires no medical supervision, the warning label regarding instructions for dose, limitation of total dose and disorders not to be treated, must be clear and explicit. Such preparation must not, by law, carry the "prescription only label."

The fifth group of interested individuals is composed of physicians. The internist will well remember the many years it took to recognize the hepatotoxic effects of dinitrophenol and the leukopenogenic effects of antipyrine, both sold "over-the-counter." He is equally familiar with the errors in judgment made with cincophen, the hepatotoxic effects of which were later discovered not to be due to the drug, but to viral hepatitis.

Allergists, dermatologists and the pediatricians have all communicated with the Commissioner regarding penicillin in milk and the allergenic effects of other drugs. Both internists and allergists are cognizant of the changing picture of medicine. Iatrogenic disease becomes an ever greater part of our practice. To name but a few of the syndromes, the hydralazine (rheumatoid-arthritis), the hexamethonium (interstitial pulmonary fibrosis), the sulfonamide (hypersensitivity angiitis), the Rauwolfia (Parkinsonism and epileptiform seizures) and the tetracycline (superinfection) grow ever more numerous.

Daily we see the anorectal effects of the antibiotics and the multitudinous end-results of steroid hormone therapy. These vary from hypocalcemia

to peptic ulcer and tuberculosis. All of these have pushed lipoid pneumonia due to mineral oil nose drops and contact dermatitis caused by ointments sold "over-the-counter" into the background.

What can we do?

The pages of the ANNALS are open to Case Reports of well-documented reactions to both prescription and nonprescription drugs. These reactions need not be typically "allergic," since the definition of the term is in transition. Fellows who feel that any medication now sold without prescription should be available "on prescription only" should keep themselves informed and make themselves heard. They must, of course, be prepared to present acceptable evidence. If any drug can be proven to be dangerous, if only to a small minority of the population, its status, by law, quickly can be changed.

"THE WHOLE TRUTH . . ."

No observer of the medical scene can deny that in the last twenty years pharmaceutical manufacturers have, through research and product development advanced therapeutics. Much money has been spent in research, not entirely in the applied phases, but much of it in so-called "pure" research. The relative paucity of funds available for the research programs of the pharmacology departments of medical schools and similar institutions has accelerated this trend. As a result of industry-conducted and industry-sponsored investigation, there are now available many drugs for the treatment of disease and the alleviation of symptoms. In fact, 36 per cent of the prescriptions written in 1955 specified drugs that were unknown as little as four years ago, and many more for therapeutic agents unknown two decades ago. No one objects that all this has helped to increase sales and make profits for the pharmaceutical industry.

The merchandising techniques and sales promotion for these new products, however, constitute a different story. Far too often is the method of implied endorsement used in an advertising brochure with an impressive list of references, the authors of which did not use the product being touted. A careful reading of the advertisement might prevent misinterpretation, but the over-all impression is too frequently misleading, intentionally or otherwise. In many of these instances, minor changes in wording would lead to the correct inferences—that the authors are being cited only in connection with limited observations. To do otherwise is a perversion of the conscientious effort, careful observation, and accurate reporting of dedicated investigators.

Another approach is the simple technique of the half-truth: quoting out of context only that bit of a report which suits the purpose. A good (or bad?) example of this is found in a recent advertisement for a proprietary antitussive which quotes that it "was found superior to potassium iodide in the degree of relief afforded, 57 per cent having responded with moderate or marked relief . . ." Disregarding the fact that 46 per cent

did as well on potassium iodide and that the differences are not statistically significant, should not the following also have been extracted from the same article: "The values obtained in this study . . . seem to indicate that both of the therapeutic preparations are *equally* [italics ours] effective in bringing about a slight but significant increase in vital capacity, as contrasted with the placebo group. Comparable results also were obtained in the timed vital capacity studies in bronchial asthma. . . ."

Few physicians have the time or inclination to verify the articles referred to or quoted in advertising in order to prove the accuracy and completeness of the citation or quotation. One is accustomed to half-truths in advertisements in the entertainment world, where it is accepted practice to excerpt and display a favorable line or two from an otherwise devastating review. One might expect something more responsible from an industry so intimately concerned with the health and well-being of the American people and with progress in medical science.

No one expects the huckster to cry "rotten fish." But as regards information disseminated from scientific firms to a scientifically trained and scientifically minded profession, meticulous handling and complete data are called for. The failure to provide them is all the more puzzling since, virtually without exception, the products ethically promoted to physicians are well-founded in pharmacologic studies and clinical trials. There would seem to be no necessity for huckstering techniques in connection with effective new drugs.

That the quality of ethical advertising has been tremendously elevated in the past generation or two is undeniable. The confidence and reliance accorded it by the medical profession is in general not misplaced. But it is not carping criticism to point out that there is room for improvement. What is the solution? Not to "pass a law." Rather to appeal to the integrity and pride of our outstanding pharmaceutical houses not to spoon-feed the profession, but to give us "the whole truth, and nothing but the truth."—*P.M.G.*

DRUG EVALUATION

There are a great many disorders which cannot be imposed by will on experimental animals and an equally great number of drug reactions which animals do not experience. The problem of drug evaluation is one of the most complex facing the research worker, because in humans he cannot induce illness under controlled conditions nor can he weed out placebo-reactors. Research of this type attempts to be objective in frames of reference in which complete objectivity is impossible.

Of interest, therefore, is the recent study by Gottschalk and his associates at the University of Cincinnati College of Medicine, with an experimental drug used as an ataractic agent. The subjects were the research workers themselves. While they recorded their own subjective feelings, the behavior of each was also observed objectively by the others. In forty-seven of sixty trials they were able (using a double blind technique) to

distinguish between the drug and a placebo. By interview, in forty-five of sixty trials, the effects of the drug could be noted objectively. Individuals differed in their responses to dosage level and the type of response depended on the personality of the subject.

Given trained subjects who can communicate easily and express subjective feelings freely (and given, as well, samples of writing and speech), it appears that data arrived at by introspection can be acceptable in part in such research. It does not, however, eliminate the necessity for controls and other objective research procedures.

PENICILLIN IN MILK

The potential public health hazard of penicillin in milk continues to concern both the authorities of the Food and Drug Administration and physicians alike. Three nation-wide surveys have proven penicillin to be present in almost all samples of milk tested, the amount varying from 0.003 to 0.08 units/ml. But, since milk masks the effect of penicillin, the amount shown is probably greater than that determined by the tests used. Although bacitracin and streptomycin have also been found present, they have not been indicted as causing or exacerbating known disorders.

The Administration has received reports from allergists, pediatricians and dermatologists that the small amounts present have affected their exquisitely sensitive patients.

So far, suggestions have been made that penicillin be banned for use in bovine mastitis, that label warnings on such preparations be worded more strongly, and that producers of milk be educated as to the abuse of the drug.

It is obvious that none of these courses of action will work. The dairy farmer whose livelihood depends on the sale of milk will not use a second-best remedy nor one which is more expensive. Although milk from penicillin-treated cows is not to be sold in market for at least three days after treatment ceases, the farmer cannot be sure whether two days is long enough or four days insufficient. Obviously then, all of the strongly worded labels and intensive courses of education are not going to keep such milk from market.

Since the banning of penicillin-containing preparations for the treatment of mastitis is neither practical nor economically feasible, why has the compulsory use of penicillinase in appropriate doses in all cows who have received penicillin not been given experimental trial? If it has been used, why have the results not been published? It is not too fantastic to imagine that penicillinase might work if added to milk.

Every allergist who has seen a penicillin-sensitive patient respond to penicillin-containing milk with urticaria, angioedema and other allergic disorders is not concerned with the rarity of the illness but with the misery and the economic effects of such reactions against which the patient has little or no defense.

How Your College Works

THE CREDENTIALS COMMITTEE

There is one committee the members of which are rarely known. They never receive public or private thanks. Their work, however thankless, is ever subject to criticism by someone somewhere, who may be, but usually is not, a Fellow of The American College of Allergists.

Their duties are difficult, if not impossible to fulfill to universal satisfaction, because they are, first, difficult to define, and second, because they fall into three separate frames of reference. The members of the Credentials Committee must be in tune with the basic philosophy which led to the founding of their organization, The American College of Allergists. The committee must also be fully cognizant of the current policies, aims, and needs of the College as it is at present constituted. They must set up operational procedures for processing candidates in four categories or levels of achievement from the Associates to the Honorary Fellows and, as well, for their advancement from one class to the next. Independently of the mechanisms involved, they must pass judgment on the changing qualifications of the applicants as they grow in stature and wisdom.

At first glance it would seem to be a simple matter to decide, on the basis of the information listed on a printed application blank, as to whether an applicant fits, and where. In actual practice there are a number of reasons why this may sometimes be complex.

There is the application itself. Although in the United States the filling out of an application blank is the usual means of joining an organization or achieving intramural promotion, in other countries, it has been realized that in the final analysis a philosophy of life and a lifetime of work cannot always be confined in so many words between so many printed lines, except for the factual information of name, address and academic degrees or diplomas. Sufficiently often to cause controversy, an applicant may be a better physician than his "papers" suggest. Rarely, the *curriculum vitae* may "look better" than the applicant. Since many intangibles and imponderables must play their part in the weighing of the final decision, neither rigid standards nor procrustean attitudes can prevail.

When we go from the applicant's academic credentials, which we may regard as a key, to the organization's requirements which may be looked upon as a lock, our next concern is to see how well they fit. The individuals who comprise The American College of Allergists (or any national organization) agree in principle but not in practice as to exactly what a Fellow should be, or for that matter, represent. Those who do not write papers may feel that there is too much emphasis on the requirements

of "Contributions to Literature" and far too little on the quality of the applicant's practice of medicine.

Those in academic positions are often more interested in the applicant's honors than they are in his personality or practice and are likely to denigrate some of the other requirements. The applicant himself, if a brilliant young physician, may chafe at waiting until the age of twenty-nine, while his elders are prone to think anyone so young may be lacking in judgment and experience. Is the only allergist in a sparsely settled area to be measured by the same yardstick as one from a metropolitan center? The physician whose practice comprises only 100 patients, seventy of whom suffer from pollinosis, can truthfully state that 70 per cent of his practice is in allergy, as compared with the physician who treats 2,000 patients, of whom 300 suffer from a multitude of allergic disorders, comprising only 15 per cent. The attitude of the physician may be more important than his actions, as when one patient is studied in depth as compared to a hundred given only symptomatic medication. For just so long as allergy is represented by specialists as far apart as radioisotope immunologists and pediatric psychotherapists, then so long will these and other questions enter into the deliberations of the members of the Credentials Committee as regards some of the applicants, although with the majority the conventional approach is, up to a point, satisfactory.

But, before we leave the subject of basic attitudes of the organization, there is one more of its aspects which must be mentioned. In every organization there is a dichotomy between those who say, "The fewer there are of us, the more highly regarded is our Fellowship. Whom can we keep out?" There are the others who, with equal emphasis, say, "The more there are of us, the stronger our position in the medical world. Whom can we bring in?"

Advocates of both points of view choose an archtype or standard Fellow to whom they often "point with pride," saying, "If only every Fellow were like so-and-so." But the Fellows who possess the highest qualifications do not represent the minimal requirements but often those of the maximum, if so beatific a state can be said to exist.

Beyond these varying attitudes which individuals hold concerning the parent organization, there are three different group reactions to external pressures. Since growth is essential, standards, although they should not be, are often unconsciously lowered when applicants are few and correspondingly raised when there are many. As the field of allergy broadens to include more syndromes, every present Fellow, whatever his basic attitude, expects more of an applicant than the ability to diagnose and treat a case of hay fever. The third change in perspective which is forced upon the group may occur when autonomous certification becomes a reality. Standards will change again as modified by those certified, those desirous of certification, and those indifferent to it.

Two other problems may plague the members of the Credential Com-

mittee. One would like to pretend that it is not true, but there is no organization, local, national or international, which can boast that it is entirely free of some form of nepotism. The qualifications of the Associates who work in the office of an influential Fellow are regarded with a much more favorable eye than those of an unknown candidate. The desire to please, and sometimes the wish not to displease, must consciously be put aside in all of the Committee's probouleutic discussions. Let it be said, in all frankness, that the opposite also occurs. Everyone knows of Associate Fellows especially in other organizations (some not centered upon allergy), who were frozen in that status because they displeased someone in the upper echelons.

In this general and detailed discussion of the basic philosophy of the group, we must not forget the individual candidate. He may suffer from the not uncommon human failing of thinking himself better than he is, and may therefore resent a justified rejection. He must not only feel and be reassured that it is not personal, but must be encouraged as well as instructed as to how he can better his credentials for future approval. The chairman of the present Credentials Committee has suggested that unofficial interviews between such Associate Fellows and members of the Committee might be arranged to take place at the Annual Congress. The candidate would then know that the decision was justified and for what reasons.

Occasionally the question is asked, "How is it that so-and-so is a Fellow?" The answer may be one of many. The standards rise, and the Fellow named may have applied when they were not as high. Or else the Credentials Committee at the time of his election, may have been swayed realistically by special consideration, as when a physician advances the cause of allergy by being an efficient and hard-working program secretary rather than the author of an earth-shaking paper (which two years later turns out not to be the flash of lightning illuminating a darkened world). Not every Fellow in every organization of allergists possesses all of the virtues. Evidence of objectivity, scientific curiosity and perspective may be taken into consideration, as seen in long range work in progress. Suffice to say, that with few errors any candidate who can successfully surmount the hurdles to the satisfaction of two or three members of the Credentials Committee, as ratified by six of the nine Regents, usually possesses qualifications which are more than enough, and often superior to those seen in rival groups.

The actual mechanisms of processing applications are not complex. As an office procedure, the name of the candidate must be proposed on an official blank of the College. The candidate must be at least twenty-nine years of age and shall have graduated from a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association. The candidate should have been proficient in applying allergy properly to his practice for three years preceding his

nomination for Fellowship. Additional criteria which shall be applied to the candidate's eligibility for election to Fellowship shall include hospital and academic appointments, personal acceptability by the Fellows in his territory, character, ethical standing, activities in medical societies, and such additional criteria as the Board of Regents shall from time to time prescribe. Further eligibility for election to Fellowship may include an adequate number of acceptable publications, a thesis on some subject of original investigation, or a reasonable number of clinical reports complete in every way with a particular reference to the diagnostic and therapeutic summary in each particular instance. A candidate for Fellowship must be sponsored by a Fellow of the College who must indicate, on the application, the classification for which the candidate is recommended. In addition, each candidate must give two references. All physicians who are references should be sent a personal letter of inquiry by the Secretary regarding the candidate's character and prestige.

If any condition of the requirements is to be waived, for whatever reason, this is a function of the Board of Regents at a regularly constituted meeting.

Processed applications and the attendant data go to the members of the committee on or about the first of each month. The members return these documents to the chairman who tabulates the results. He returns the results of the tabulation to each member so that each can be certain that no error has been made. He also sends the results of the tabulation to the executive office for action by the Board of Regents. A unanimous or a majority affirmative vote of the three members of the Committee suffices for acceptance. Any lesser vote signifies rejection but permits final action by the Board of Regents.

To be acted upon at any annual business meeting, an application must be sent in at least ninety days before the College convenes. This gives the Credentials Committee time for study and deliberation and allows for the successful candidate to be notified that he is required to attend the next Annual Meeting for induction. If, for any valid reason, he cannot be present, the successful candidate has an opportunity to write for permission to obtain official notification of election or of promotion *in absentia*.

If the data presented are not sufficient, the chairman of the Credentials Committee or any of its members acting independently may communicate with the applicant himself or with Fellows in the area in which he practices, seeking further information. If any member of the Committee possesses information beyond that submitted, it is his duty to see to it that the other members are duly informed.

Although the qualifications listed above are taken from the booklet on Constitution and By-Laws, they are subject to change as regards progressive raising of the standards as emanating from the Fellowship at large, the Credentials Committee itself, the Committee on Constitution

and By-Laws, the Board of Directors and the Board of Regents. They are under continuous scrutiny and with the passage of time are always in the process of being interpreted more strictly as to their spirit and letter. It is for this reason that all three of the members of the Credentials Committee have been, or are, Regents, and that two of these are respectively in their first and second years of Regency.

Since the affirmative decisions of the Credentials Committee once ratified are, in a sense, irrevocable, theirs is a great responsibility. Fellowship once granted cannot be revoked, although a Fellow may be disciplined or his resignation requested. Their duties are, therefore, exacting, especially since the future membership of The American College of Allergists rests entirely in their hands.

Letter to the Editor

To The Editor

ANNALS OF ALLERGY

Dear Sir:

I noted with interest the editorial in the September-October issue of the ANNALS OF ALLERGY on "Blisters: Poison Ivy or Phenyl Mercuric Acetate?" in which the writer implied that the blistering was due to the primary irritant action of phenyl mercuric acetate.

I would like to point out that, if he is correct in his assumption, it should be possible to differentiate between an allergic, eczematous eruption due to poison ivy and blisters due to the primary irritant action of phenyl mercuric acetate. The simplest way of making a differential diagnosis is clinical inspection. Primary irritant blisters are more likely to be large and resembling a burn rather than the typical eczematous appearance of the poison ivy eruption. Another method of differentiation was suggested originally by Nexmand of Denmark (J. Invest. Dermat., 13:85, 1949) and was subsequently used by Baer and Yanowitz (J. Allergy, 23:95, 1952). This consists of smearing out the fluid from the blisters on a slide similar to a blood smear and then staining with Wright's or Giemsa's stain. If the vesicular or bullous reaction is one of a *primary irritant* character, such as would be expected from phenyl mercuric acetate, the cellular content of the blister fluid, as determined by a differential count, is likely to consist almost exclusively of *polymorphonuclear leukocytes*. On the other hand, if the reaction is due to an *allergic* sensitization to poison ivy, the likelihood is that the blister fluid will contain 40% or more of *mononuclear cells* (lymphocytes and monocytes).

If the eruption was due to *allergic* sensitization to phenyl mercuric acetate the blister fluid differential count would, of course, not be of practical value for differentiation between an eruption due to poison ivy or phenyl mercuric acetate.

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Papers of Interest

Lapides, J., and Boyd, R. E. The effect of intravenous Benadryl in allaying allergic manifestations of 70 per cent Urokon. J. Urol., 75:1016 (June), 1956.

In 1281 consecutive patients receiving intravenous Benadryl immediately prior to injection of 70 per cent Urokon no urticarial, asthmatic, or shock-like reactions were noted.

Krohn, S. E.: Anaphylactic shock from oral penicillin. New York State J. Med., 56: 1789, 1956.

Three cases, two of them with positive passive transfer.

Black, A. P.: A new diagnostic method in allergic disease. Pediatrics, 17:716-724 (May) 1956.

Dried allergens and plasma from a sensitized or allergic patient are mixed with living leukocytes and pigments either from the patient or from a nonallergic donor, kept at 37° C for microscopic observation. A cytotoxic reaction has been observed within fifteen minutes with offending allergens but not with innocuous substances.

Fowler, E. P.: Hypersensitization of tissue to infections and allergic reactions. Tr. Am. Acad. Ophth., 59:699-711 (Nov.-Dec.) 1955.

Small vessels and some tissues can be hypersensitized to epinephrine, hormones, or chemicals by denervation, local trauma, or infection. It is suggested that the changes in capillary permeability due to mural red or white thrombi may explain the precipitation of hypersensitive reactions by infection, allergy, or psychosomatic disorders.

Blodgett, F. M.; Burgin, L.; Iezonni, D.; Gribetz, D.; and Talbot, N. B.: Effect of prolonged cortisone therapy on the statural growth, skeletal maturation, and metabolic status of children. New England J. Med., 254:636-641 (April 5) 1956.

A minimum of 35 mg/sq meter daily was required to reduce the growth rate of normal children, but it is tentatively concluded that cortisone can be administered to growing children for a considerable time without altering the potential ultimate stature. Dosage should be reduced below growth-suppressing levels to permit children to recover statural growth before closure of skeletal epiphyses in those who have not reached puberty.

Hyde, H. A.; Richards, M.; and Williams, D. A.: Allergy to mould spores in Britain. Brit. M. J., 1:886-890 (April 21) 1956.

A ten-year survey shows that 96 per cent of 100 genera belong to one or other of eleven genera only, the most plentiful being *Hormodendrum* (37.8 per cent) decreasing to *Alternaria* (1.0 per cent). Asthma due to *Hormodendrum* was demonstrated in 4.0 per cent of 627 patients tested, and an attack could be precipitated by an inhalation of the spores. It was concluded that 5.0 per cent of all cases of asthma may be due to molds.

Cotes, J. E.: Reassessment of value of oxygen masks that permit breathing. Brit. M. J., 1:269-271 (Feb. 4) 1956.

Comparison of the Haldane and B.L.B. masks in healthy and dyspneic patients, with and without rebreathing, show that the patient with chronic chest disease should use a mask furnished with a reservoir bag fitted with a valve to prevent rebreathing.

Dubos, R. J.: Chemoprophylaxis, immunity and prevention in tuberculosis. Am. Rev. Tuberc., 74:117 (July) 1956.

Critical review of chemotherapy, especially with isoniazid.

Lasagna, L.: Pain and its relief. A symposium. J. Chron. Dis., 4:1-102 (July) 1956.

An important group of papers on experimental and clinical studies of pain and methods for its relief.

Robinson, H. M., Jr.; Robinson, Raymond V.; Strahan, John F.; and Cohen, Morris M.: Steroid preparations for topical therapy of skin eruptions. U. S. Armed Forces Medical Journal, 7:963 (July) 1956.

Steroid unguents were useful in the treatment of 4,000 patients suffering from erythema solare, atopic dermatitis, intertrigo, pruritus ani, and vulvae; lichen simplex, eczema, and stasis dermatitis. It did not help in thirteen other skin disorders from psoriasis to verrucae.

Combes, F. C., and Morris, G. E.: Contact Sensitivity to Inappreciable Exposures. Indust. Med., 25:289-290 (June) 1956.

A recurrence of dermatitis or urticaria was experienced when sharing a room or using the toilet of a patient who had received penicillin. A second patient experienced a recurrence of conjunctivitis and periorbital dermatitis after working next to a girl who was sucking a penicillin lozenge. In a boy with a history of atopic dermatitis, the odor of lobster caused swelling of eyes and face.

McIntosh, H. D.; Estes, E. H.; and Warren, J.: The Mechanism of Cough Cyncope. Am. Heart J., 52:70-82 (July) 1956.

The studies suggest that syncope due to cough is the result of elevated intrathoracic and intra-abdominal pressure to the cerebrospinal fluid compartment causing an equal rise in its pressure. This cerebrospinal fluid pressure, by increasing the extravascular pressure causes blood to be "squeezed" from the cranium. The brain becomes rapidly "bloodless," anoxia develops, and syncope may occur.

PAPERS OF INTEREST

Riemer, A. D.: The effect of prednisone in the treatment of refractory cardiac edema. Bull. Johns Hopkins Hospital, 98:445 (June) 1956.

Prescribed for a patient suffering from myocardial infarctions, prednisone reduced edema and seemed to restore cardiac compensation.

Cornbleet, T.: Dermatology: Action of synthetic antimalarial drugs on psoriasis. J. Invest. Dermat., 26:435 (June) 1956.

Quinacrine, chloroquine and hydroxychloroquine caused acute exacerbation and spreading in six patients with generalized psoriasis, with improvement when the drugs were withdrawn.

Shahani, K. M.; Gould, I. A.; Weiser, H. H.; and Slatter, W. L.: Observations on antibiotics in a market milk supply and the effect of certain antibiotics on the keeping quality of milk. Antibiotics & Chemotherapy, 6:544 (Sept.) 1956.

Of the 151 raw milk samples collected from the Columbus area, 1.3 per cent showed strong antibiotic activity, especially for chlortetracycline and oxytetracycline.

Sulfonamide hypoglycemic agents. Am. J. Pharm., 128:209 (June) 1956.

Survey, with notes on side effects and toxicity.

Hypoglycaemic sulphonamides: Editorial. Brit. M. J., 2:465 (Aug. 25) 1956.

Discusses problem and high incidence of side effects—rashes, leukopenia, and fatal agranulocytosis.

Sciarra, J. J.: Aerosol therapy. Aerosol Age, 1:14 (Sept.) 1956.

New journal. Excellent review.

Bierman, H. R.; Kelly, K.; Cordes, F.; and Corlentz, A.: The influence of histamine upon the circulating level in patients with the leukemias. Blood, 11:708 (Aug.) 1956.

Nonleukemic patients respond to intravenous histamine with leukopenia lasting ten to fifteen minutes. Leukemic patients respond with leukocytosis.

Bartter, F. C.: The role of aldosterone in normal homeostasis and in certain disease states. Metabolism, 5:369 (July) 1956.

Aldosterone affects transport of sodium, potassium, and hydrogen ions. Secretion is controlled by complex physiologic mechanisms. Explorations of the disorders associated with excess or decrease are being initiated.

Papanicolaou, G. N.: Degenerative changes in ciliated cells exfoliating from the bronchial epithelium as a cytologic criterion in the diagnosis of diseases of the lung. New York State J. Med., 56:2647, 1956.

Description of changes found in sputum specimens which may be a of great potential interest for the differential diagnosis of bronchial asthma.

Waksman, B. H., and Groupe, V.: Suppressive activity of xerosin on allergic and other inflammatory reactions of the skin in guinea pigs. J. Immunol., 77:47 (July) 1956.

Xerosin injected parenterally causes marked reduction of the tuberculin reaction and moderate reduction of the reversed passive Arthus reaction. Unaffected are the histamine wheal and the wheal and flare of passive skin anaphylaxis.

Crump, J.: Salk polio vaccine. Comments concerning administration to allergic children. J. Am. Med. Women's A., 11:255 (July) 1956.

Approximately one-half of the first 150 known allergy patients gave positive skin reactions, 25 per cent large.

Boren, H. G., and Miller, D. V.: Evaluation of 3,5-diiodo-4-pyridone N-acetic acid (Dionosil) as a bronchographic agent. Am. Rev. Tuberc., 74:178 (Aug.) 1956.

Reported as effective and safe.

Kelly, J. J.: Salicylate ingestion; a frequent cause of gastric hemorrhage. Am. J. M. Sc., 232:119 (Aug.) 1956.

Patients suffering from gastrointestinal bleeding should always be questioned regarding the ingestion of salicylate-containing medications.

Sherman, John F.: Enhancement of the central nervous system effects of strychnine and pentobarbital by diphenhydramine. Science, 123:1170-1171 (June 29) 1956.

Diphenhydramine (Benadryl®) has been described as causing both "depressing" and "stimulating" side effects. The expressants described demonstrate that it enhances the pharmacologic effect of both pentobarbital and strychnine.

Herxheimer, H.: Cause and treatment of hay fever. Pharm J., 176:350 (June) 1956.

A review of desensitization by injection and symptomatic control with antihistaminic agents.

Bickerman, H. A.; Cohen, B. M.; German, E.; and Itkin, S.: The cough response of normal human subjects stimulated experimentally by citric acid aerosol; alterations produced by anti-tussive agents. Am. J. M. Sc., 232:57, 1956.

Citric acid aerosols caused a "normal" cough response in fifteen normal subjects tested 359 times. A useful technique for measuring effects of antitussive agents.

News Items

THIRTEENTH ANNUAL CONGRESS OF THE AMERICAN COLLEGE OF ALLERGISTS

It appears from the number of papers which have been submitted for presentation at the Chicago meeting that this will undoubtedly be the finest program The American College of Allergists has ever presented.

There were so many good papers to be presented that the manner of presentation was changed from that previously followed. The total time available was (with one or two exceptions) divided equally between the speakers; each can use the time allotted to him for the presentation of his paper, in which case no time has been left for discussion. If the full time given has not been used, the remaining time allotted may be taken up with discussion. Extended discussion of any controversial paper will be permitted only at the discretion of the chairman and in accordance with how closely the scheduled program times are being followed.

INSTRUCTIONAL COURSE IN MOLD ALLERGY

The Association of Allergists for Mycological Investigations, Inc., announces an instructional course on the fundamentals of mold allergy to be held at the Chicago Medical School on Saturday, March 23, 1957. Lectures covering sources, seasonal and geographic distribution, and botanical relationships will be supplemented with laboratory demonstrations of the morphological and cultural characteristics of the common allergenic molds. Diagnosis and treatment of mold allergy will be presented in lectures and clinical conferences with mold sensitive patients. Questions from the floor will be permitted after each presentation and a final question-and-answer period with the entire faculty participating will conclude the course. For the complete program, see page 534.

The course will be open to physicians and to technicians **employed in physicians' offices** or otherwise assisting allergists in their work. The registration fee for the course is $25. Preregistration is recommended, as enrollment will be limited. Address applications to The Association of Allergists for Mycological Investigations, Inc., Homer E. Prince, M.D., President, 808 Caroline Street, Houston 2, Texas.

ESSAY CONTEST SPONSORED BY WOMEN'S AUXILIARY

The Women's Auxiliary of The American College of Allergists announces, for the third time, that at the Thirteenth Annual Meeting of The American College of Allergists two prizes will be offered.

THE BELA SCHICK AWARD: A prize of $150.00 and a Certificate of Merit for the best paper written by an Associate Fellow of The American College of Allergists to be presented at the Annual Convention of the College, March 20-22, 1957.

THE CLEMENS VON PIRQUET AWARD: A prize of $75.00, plus an additional $75.00 to defray traveling expenses to the Convention, together with a Certificate of Merit, will be awarded for the best paper written by an intern or resident on any aspect of Allergy, to be presented at the Annual Convention of the College, March 20-22, 1957.

All papers submitted are to be judged by a committee consisting of the program committee of the annual College convention and members of the editorial board of the ANNALS OF ALLERGY.

NEWS ITEMS

ASSOCIATION OF ALLERGISTS FOR MYCOLOGICAL INVESTIGATIONS, INC.

The Association of Allergists for Mycological Investigations, Inc., announces the inauguration of a series of studies to ascertain and measure the role of wood-rotting fungi (mildew) in the causation and exacerbation of allergic disorders. Preliminary work in this field has been done by Maunsell and by Frankland in England.

Nonmember physicians who wish to cooperate in this research study of nation-wide importance should communicate with the President of the Association, Dr. Homer E. Prince, 808 Caroline Street, Houston 2, Texas.

SOUTHEASTERN ALLERGY ASSOCIATION

The Southeastern Allergy Association held its annual meeting in Charlotte, North Carolina, October 5-6, 1956. There was an election of officers as follows:

President, Dr. Clarence Bernstein, Orlando, Florida; president-elect, Dr. Charles P. Wofford, Johnson City, Tennessee; secretary-treasurer, Dr. Katharine Baylis MacInnis, Columbus, South Carolina; first vice president, Dr. Bennette B. Poole, Winston-Salem, North Carolina; second vice president, Dr. William A. Thornhill, Jr., Charleston, West Virginia; and committeemen, Dr. Mary Margaret McLeod, Sanford, North Carolina, and Dr. Lamar Peacock, Atlanta, Georgia.

LABORATORY MANUALS FOR SALE

Dr. Stephen D. Lockey still has available a few copies of the Manual of Office and Laboratory Procedures, which was used in his laboratory course during the Twelfth Annual Graduate Instructional Course in Allergy at the Hotel New Yorker, New York City, April 15-17, 1956. These manuals can be purchased for $4.00 each, plus twenty-five cents postage. All profits from the sale of these manuals go directly into the treasury of the College. Books may be purchased directly from Dr. Stephen D. Lockey, 60 North West End Avenue, Lancaster, Pennsylvania.

NEWS OF MEMBERS

Doctor Albert Howard Unger is now engaged in the practice of allergy at 911 Huckleberry Road, El Paso, Texas.

Doctor Donald Lee Unger is now associated with Drs. Leon Unger, Ines Maria Santos, and James H. Johnson at 185 North Wabash Avenue, Chicago, Illinois.

* * *

Because of the Program of the March Meeting and the Index, the review of Dermatologic Allergy usually published in the November-December issue of the ANNALS OF ALLERGY has been held over to the January-February issue.

BOOK REVIEWS

THE LUNG AS A MIRROR OF SYSTEMIC DISEASE. Eli H. Rubin, M.D., Professor of Clinical Medicine, Albert Einstein College of Medicine, Yeshiva University, New York. 288 pages including index, illus. Springfield, Illinois: Charles C Thomas, 1956. Price $12.50.

In my tutoring classes at Medical School we would sometimes idle away a slow summer afternoon by listing (without benefit of French's Differential Diagnosis) the number of causes we could find for a single sign or symptom, as, for example cough or hematemesis. Having run out of causes we would then seek a single additional sign or symptom which would make a differential diagnosis certain.

Dr. Rubin viewing the x-ray of the chest as a "window, not a portrait" and as a "mirror of passing events" uses it as a case-finding tool in systemic disease. It serves not only to corroborate the presence of the primary pulmonary disorders, such as tuberculosis, neoplasms, and the pneumonias, but as a means of detecting eighty secondary and concomitant pulmonary conditions. These include metabolic diseases, diseases of the blood, diseases of the skin and mucous membranes, and the pulmonary manifestations of certain abdominal and metastatic diseases, as well as those of cardiovascular origin, and the allergic disorders, to which over 15 per cent of the book is given.

The description of the Hamman-Rich syndrome (diffuse interstitial pulmonary fibrosis) its pathogenesis, allergic basis, and case reports of its occurrence in two sisters is alone worth the price of the book. The emphasis on the pulmonary lesions in "rheumatoid disease" are well described. Five of the six patients personally studied showed a "pre-existing hypersensitivity in the form of urticaria of unknown cause or allergic reactions to sulfonamides or penicillin." Another patient demonstrated sensitivity to iodides.

In a chapter entitled "Diagnosis: The Changing Scene," the author describes the present as the "metabolic-biochemical-electrolyte" era, and wittily compares the patient who dies in "electrolyte balance" with patients with pneumonia who once died with "pink cheeks." He strikes a chord of sympathy, however, by stating that patients are not biochemical phenomena, but rather distressed people in unhappy environments.

Although some of the disorders listed are uncommon, and the final certainty of diagnosis may require what appear to be elaborate procedures available only in well equipped institutions, nevertheless, the patient is entitled to such diagnosis. Until it is made, treatment must be uncertain in approach and doubtful in effect.

Not so rare are the iatrogenic disorders brought on by new drugs, causing new types of drug reactions. Hydralazine (Apresoline), causes in up to ten per cent of the patients a syndrome associated with pleural and pericardial effusions. In a series of 256 patients treated with a combination of drugs, one of which was hexamethonium, five of the eight who died of apparent pulmonary complications demonstrated a chemically induced interstitial pneumonitis.

The chapter on diagnosis is especially well written with emphasis on the fact that abnormal physical signs, if elicited, are better appreciated after the x-ray of the chest has been seen, and the chest re-examined. The film may, on the other hand, be "negative," in the presence of disease. The stethoscope is, however, more often decorative than a precise instrument of diagnosis.

The sections dealing with types of cough, expectoration, hemoptysis, chest pain, and dyspnea are excellent reviews. The section (with super-imposed pictures) on

anatomy and technical consideration of the chest x-ray should serve as a course in how to read an x-ray of the chest.

The penultimate chapter on Pitfalls in Roentgen Diagnosis rounds out the picture as does the last chapter on Laboratory and Exploratory Aids.

The reviewer read this book and then reread it with a feeling which, if expressed in words, would say, "I've never met Dr. Eli H. Rubin, but I wish I had, say twenty years ago. He not only writes well, but he must be an excellent physician."

BLOOD GROUP SUBSTANCES, THEIR CHEMISTRY AND IMMUNOCHEMISTRY. Elvin A. Kabat. 330 pages, with index and bibliography. New York, New York: Academic Press, Inc., 1956. Price $8.00.

With the publication of this monograph Dr. Kabat has greatly aided workers in many aspects of blood group work to understand and follow the remarkable developments in the chemistry of the specific substances in red blood cells. As such, the book should be on every laboratory bench and study shelf of those who work in the specific field of blood grouping. More important is the general value of the book to biologists interested in the relation between chemical structure and biologic activity. This monograph presents an orderly and masterful development of immunochemical knowledge of the blood group substances.

The monograph begins gently but concisely with a chapter on the human blood group factors, blood grouping, transfusion reactions, isoimmunization, erythrocyte mosaicism, and acquired tolerance to foreign cells. It concludes with several pages on the genetic basis of blood grouping, using the Fisher-Race nomenclature. The bibliography of 248 references for the important introductory chapter, including references dating to 1665, sets the level of the remaining nine chapters in breadth of scholarship and analysis.

There follows a most useful methodologic chapter, again complemented by a large bibliography, all of which would make a useful syllabus on the techniques of immunohematology.

The third chapter on the distribution and sources of blood group substances concludes the introductory portion of the monograph. At this point, the monograph enters the most detailed and painstaking analysis of methods, results and interpretations of the purification, chemical structure, and the chemical and immunochemical evidence which indicate that the bulk of the substances studied are associated with specific blood group activity.

A chapter of great interest to biologists as well as allergists reviews in much detail the extent of species differences and similarities of the blood group substances. This chapter indeed provides a succinct lesson on the power of the quantitative serologic method in giving clues as to the structure of the substances in relation to their biologic specificity. And this is further developed in great detail in the chapter which analyzes the structural changes produced by various chemical and enzymatic treatments, from which the oligosaccharide nature of the blood group determinants was concluded.

The chapter on antibodies to the blood group substances is distinguished by the only extant critique of the hemagglutination studies of Wurmser and colleagues (studies of great importance because of the possible distinction inferred between "natural" antibodies and those produced by deliberate immunication). On this basis, Kabat presents a most precise analysis of the thermodynamics in the Wurmser argument. This chapter is not properly subject to review but must be read in the original.

A discussion of the ecologic aspects of the blood group substances concludes this work, in which the author appraises the role of these substances in various biologic

phenomena (e.g., their relation to virus-inhibitors, relation to intrinsic factor and to virulence-enhancement factors) and their antigenicity.

No field of hypersensitivity can fail to derive benefit from the application of the principles upon which Kabat has based his work and which he critically appraises in relation to the studies of those who have preceded him or are his contemporaries. The clinical pathologist will be constantly reminded in this book of the dividends which devoted attention to precise immunochemical techniques can yield, once the lack of meaningfulness of the word "titer" is acknowledged. It is first of all a definitive treatment of the chemistry and immunochemical knowledge available today on the blood group substances, and for that the book can stand alone. But it is, furthermore, an example of the application of uncompromising standards of laboratory performance which has led to one of the most satisfying of all chapters in the nature of biologic specificity.

The allergist will find this book of immense value not necessarily because of any immediate applications but as an example of the kind of rigorous thinking needed in any subject which is so closely involved with the relation between structure of a reagent and biologic specificity. The monograph fully complements those by Mourant, Race and Sanger, Mollison, and Boyd which have preceded it on the genetic, clinical and anthropologic treatments of the blood groups.

ONE LITTLE BOY. Dorothy W. Baruch, Ph.D., Beverly Hills, California. 242 pages including index. New York: Julian Press, Inc., 1952. Price $3.50.

This volume by Dr. Baruch may well serve as an introductory volume to understanding the feelings of children. In the field of allergy, especially in pediatric allergy, insufficient statistical data has prevented understanding the hypersensitiveness of the child to parents, siblings and teachers as well as to foods and inhalants. The paucity of data, however, should stimulate those in the field of pediatric allergy to follow the path of Dr. Baruch in "One Little Boy."

Dr. Baruch emphasizes that Kenneth, the hero of this allergy saga, has thoughts and feelings characteristic of childhood rather than specifically related to her patient, Kenneth. Whether or not the reader agrees with Dr. Baruch is unimportant. The interaction of the reader with the book will result in many insights for the reader irrespective of his special training. The reviewer does not agree with all that Dr. Baruch believes in connection with the psychodynamics of the allergic child, but he does feel strongly that Dr. Baruch has made an important contribution which is of interest to all of us in the field of allergy.

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ANNALS of ALLERGY

PUBLISHED BY THE AMERICAN COLLEGE OF ALLERGISTS

Index Number

Graduate Instructional Course—March 17-19, 1957

and

Thirteenth Annual Congress—March 20-22, 1957

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Naterman, H. L. The Journ. of Allergy. 24:60,1953.

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Unger, A. H. and Unger, L. Annals of Allergy. 10:128,1952.

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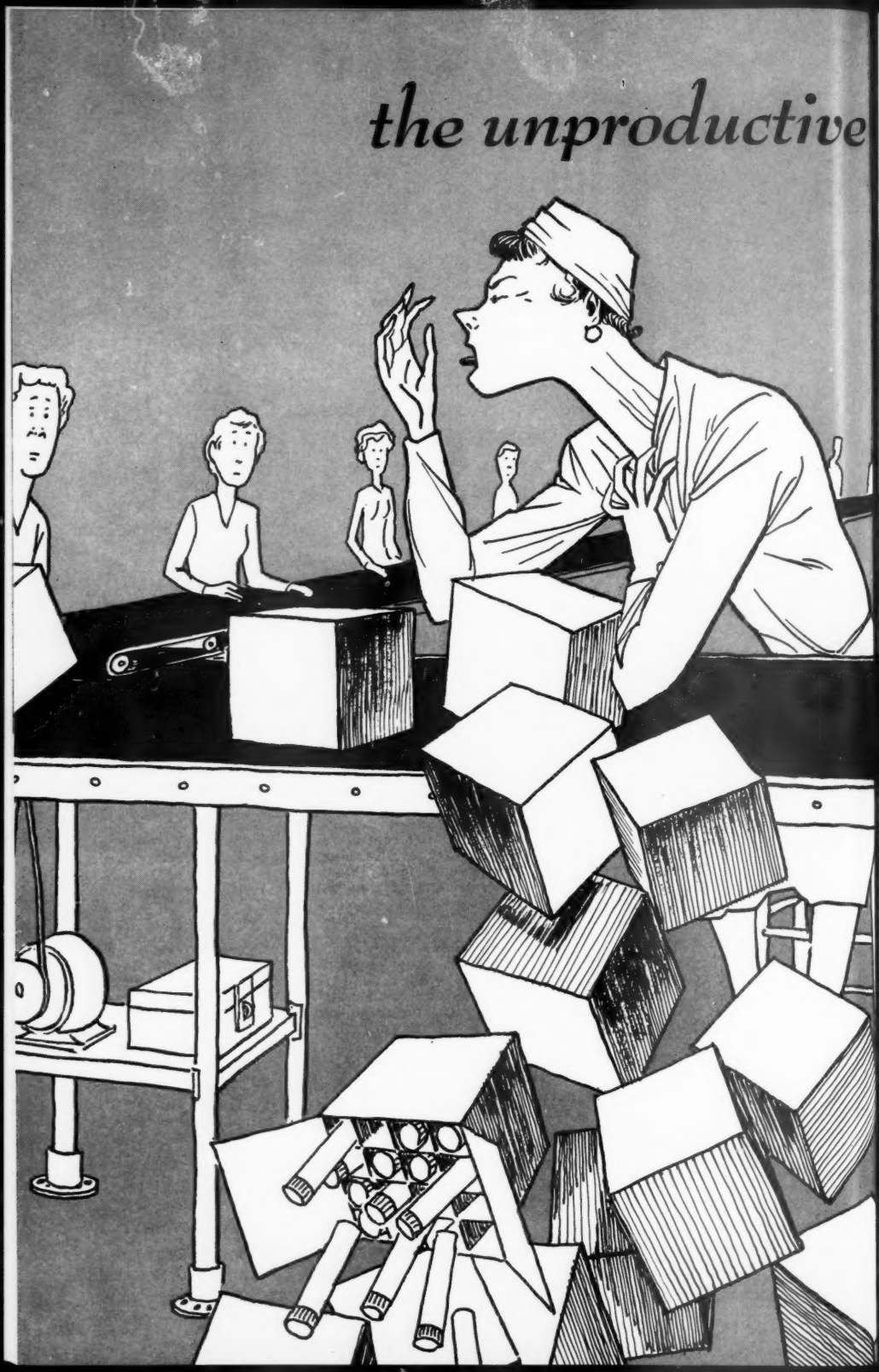
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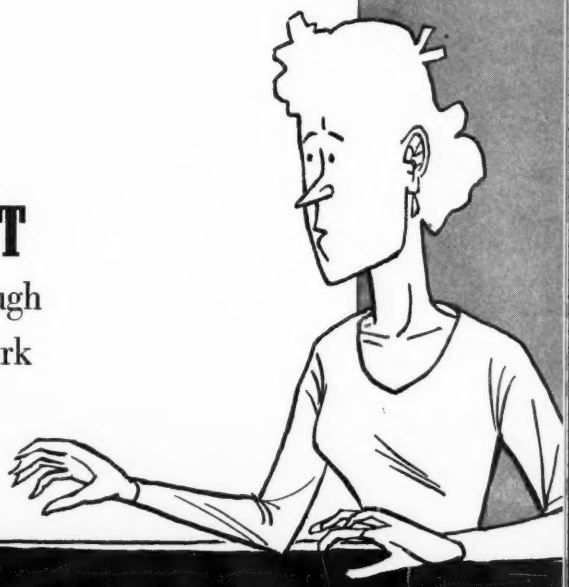

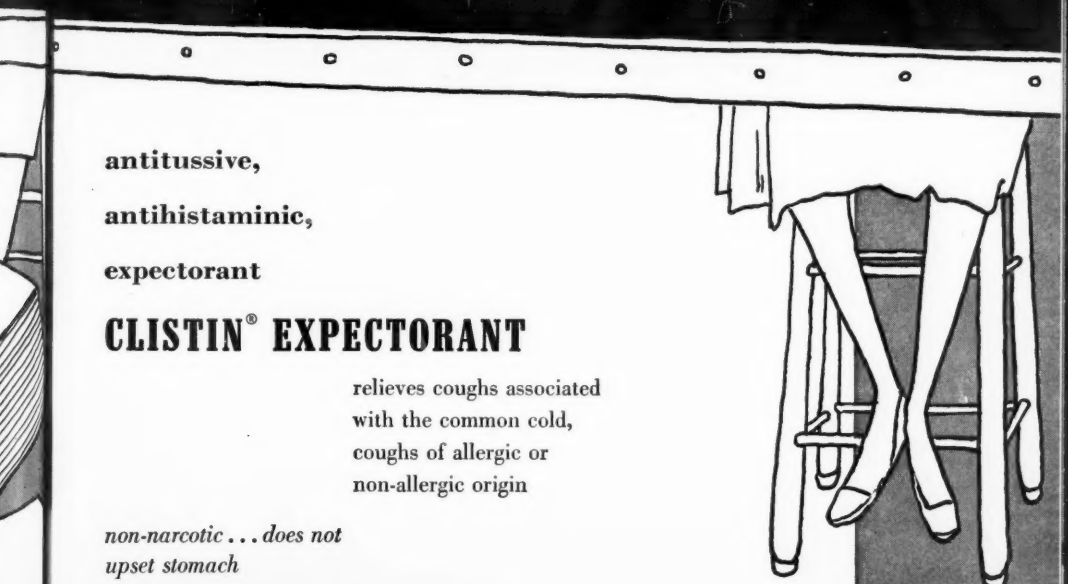

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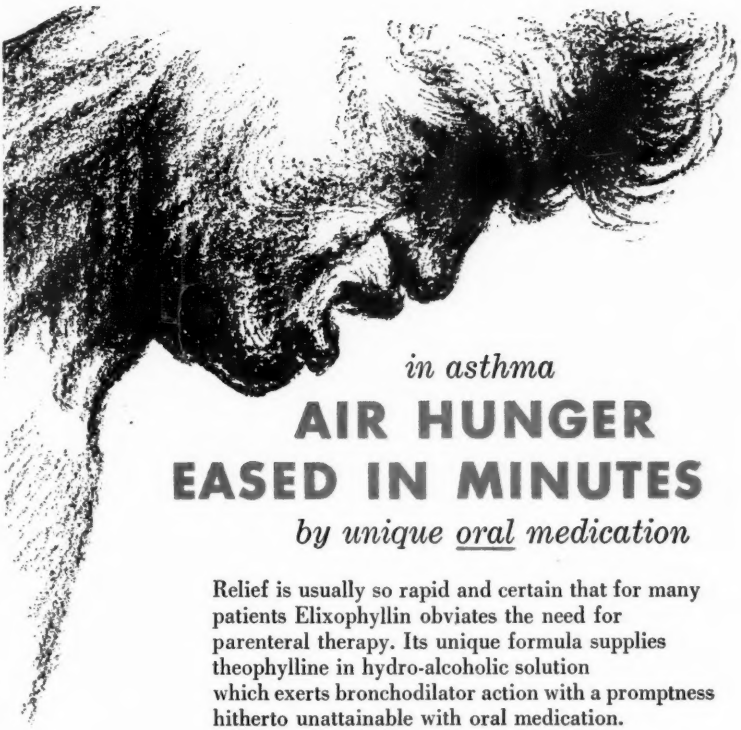

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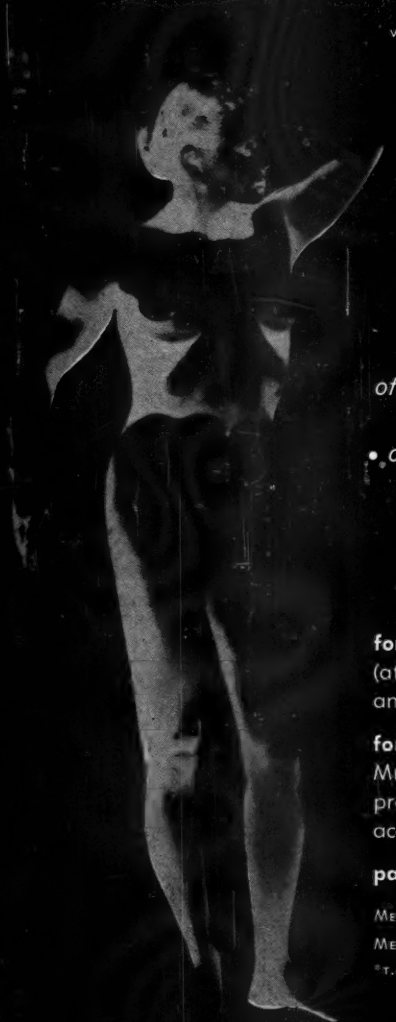

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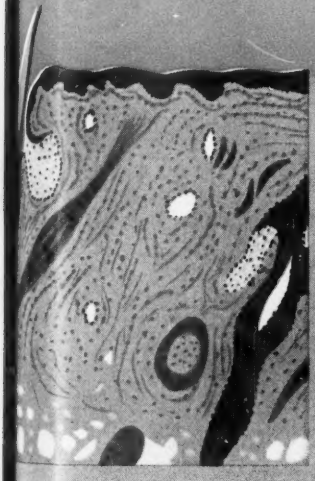

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Lockwood, James H., Cmdr., MC, USN, U.S. Naval Hospital, San Diego, Cal. Bulletin of the Association of Military Dermatologists, June 1955, p. 2

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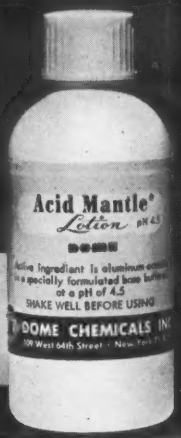

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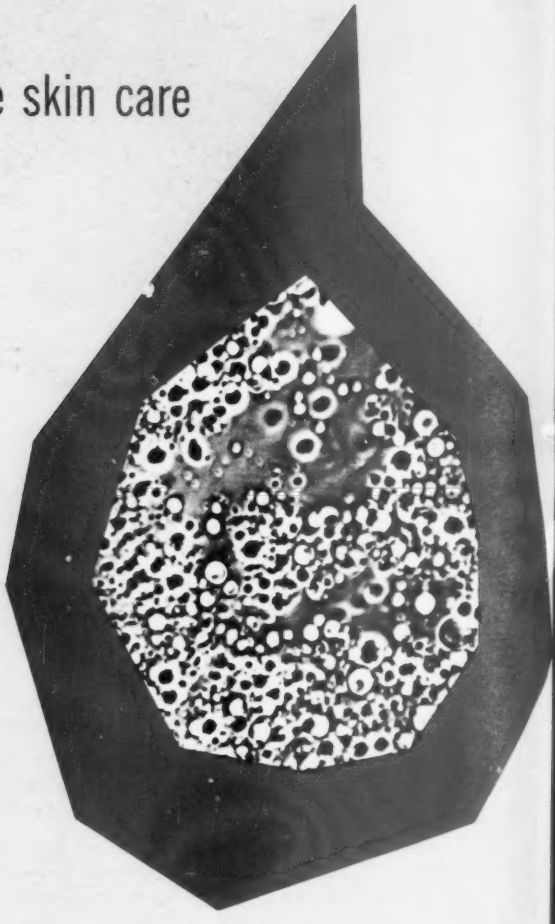

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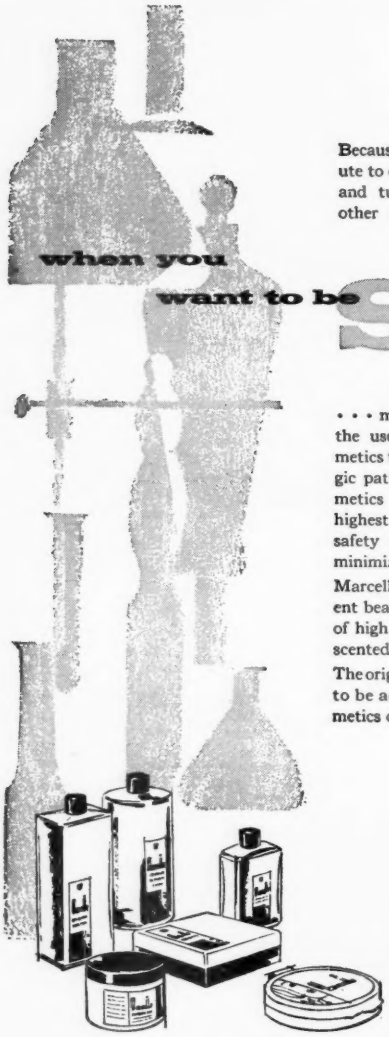

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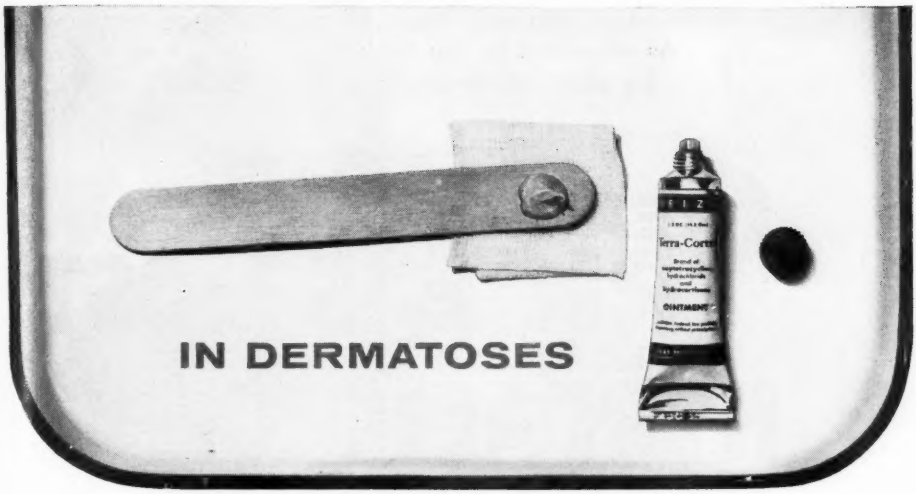

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Topical Ointment

Proved effective in 526 of 575 cases of varied dermatoses. "No adverse reactions were noted..." in the entire group.[1]

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1. Robinson, R. C. V., and Robinson, H. M., Jr.: South. M. J. 49:260, 1956.
2. Lubowe, I. I.: To be published.

As reported in the Archives of Pediatrics by Slobody, Untracht and Hertzmark.

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In their intensive study of 174 unselected children, Slobody, Untracht and Hertzmark did not find a single case of intolerance to cooked rice. After judging results of both their own survey and comparative reports on sensitivity to cereals, they conclude that "rice . . . shows the fewest allergic reactions of any cereal checked . . . Even children potentially allergic to rice tolerate it well when it is cooked in the presence of moisture."

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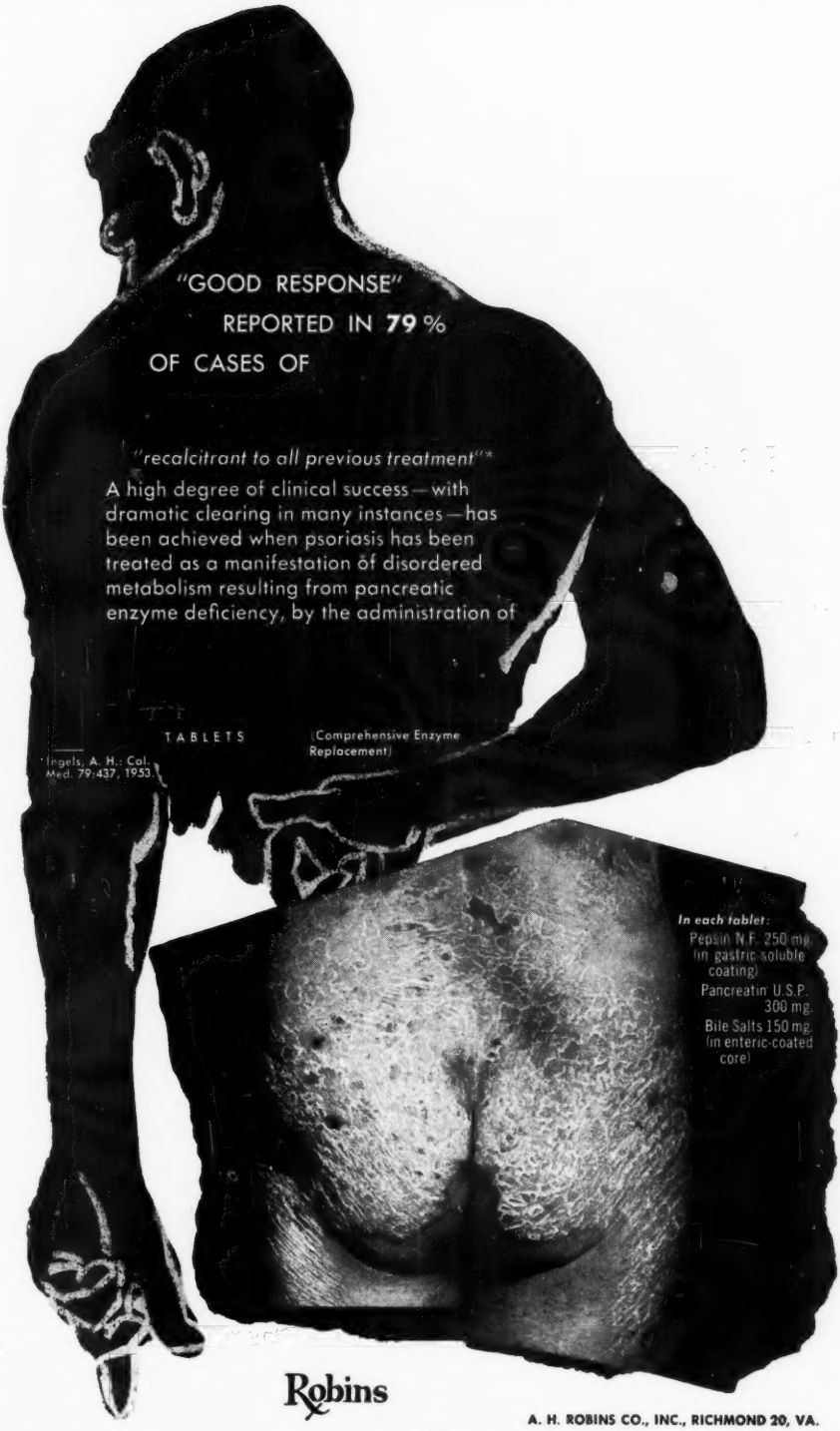

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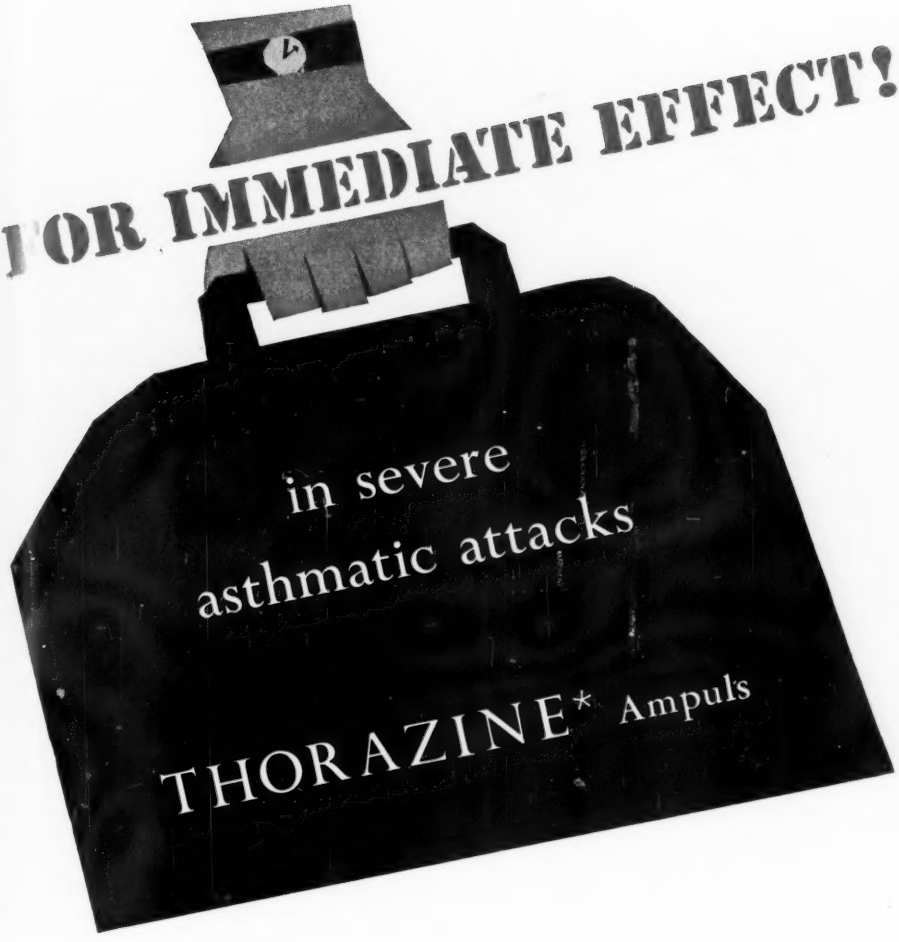

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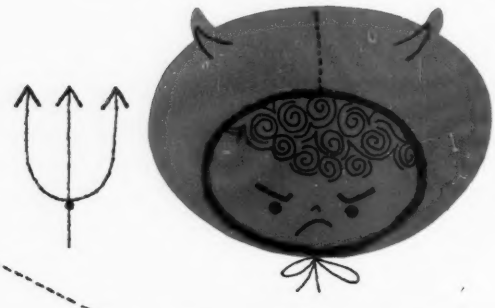

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allergies

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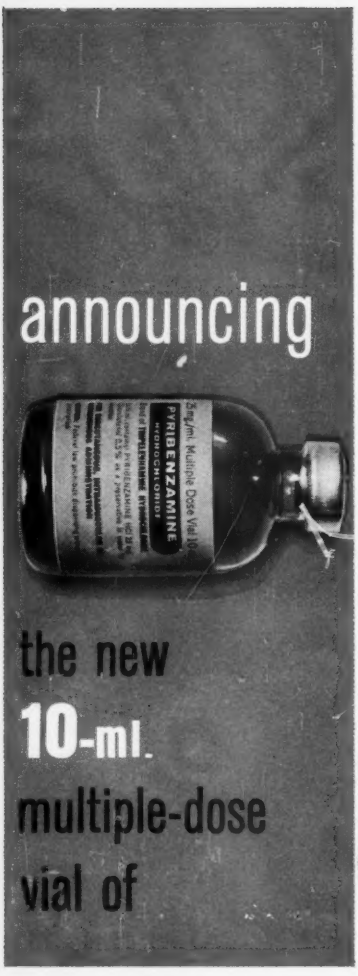

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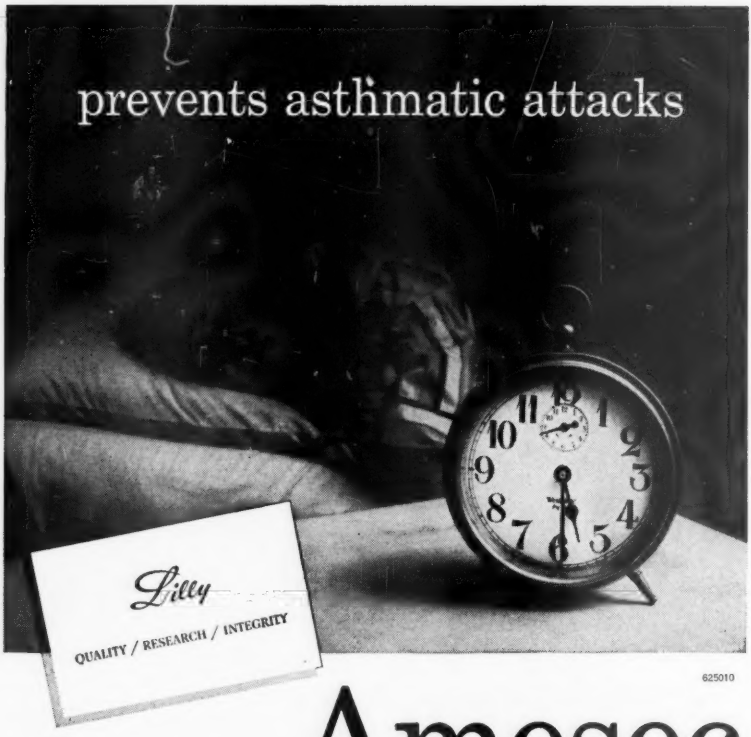

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*Study of 50 children: Dees, S. C., et al., Ann. Allergy, *II*:297, 1953.

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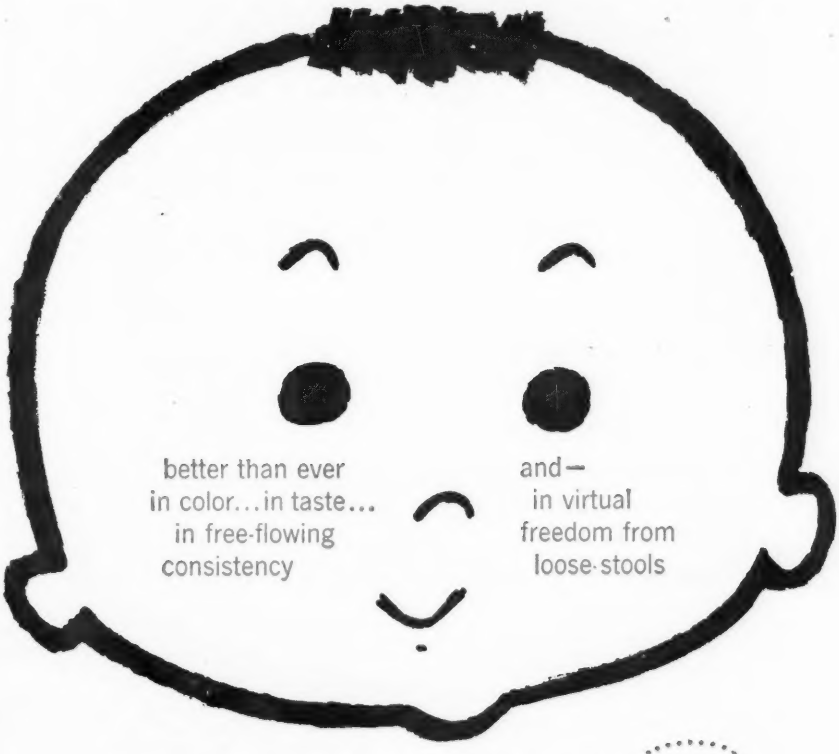

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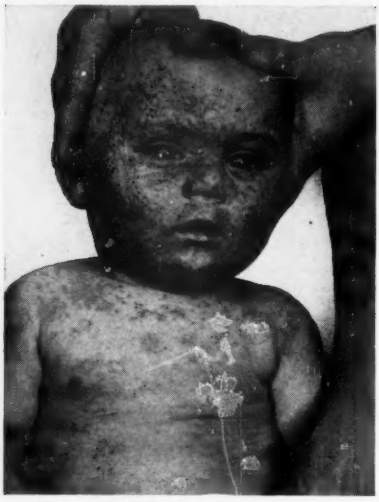
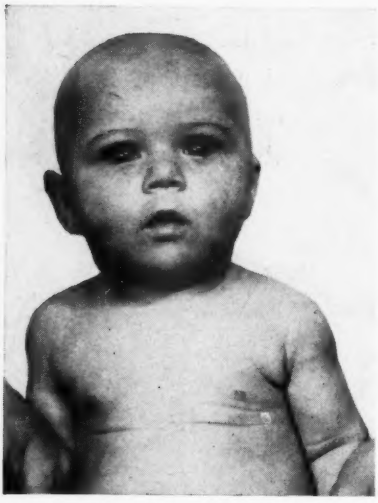


Before Treatment



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Faster, more patient-acceptable method of identifiying allergens

Permits the patient to have an **adequate** diet, alleviates existing allergic symptoms promptly, identifies the allergenic food with minimal inconvenience to the patient.

Faster, more patient-acceptable deallergization to the offending foods

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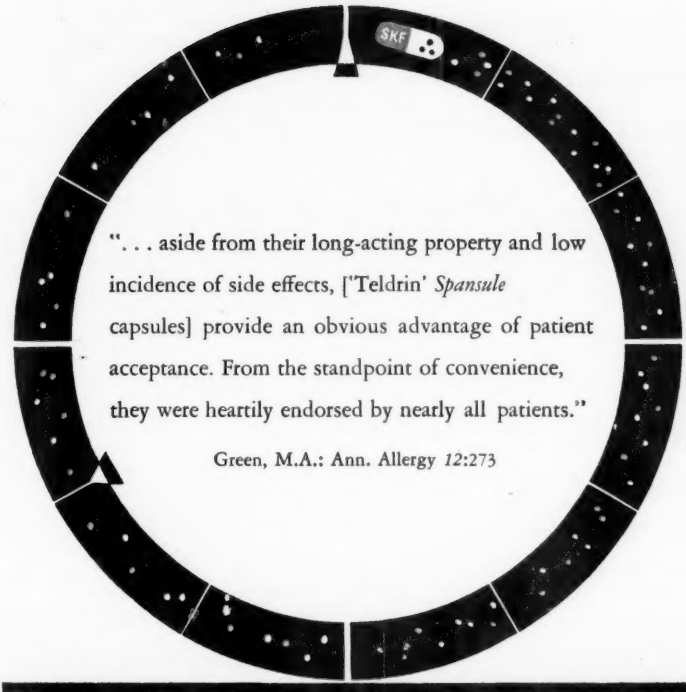

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8 mg. & 12 mg.

Spansule*
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*T.M. Reg. U.S. Pat. Off. Patent Applied For

Medihaler

Means self-powered, uniform, measured-dose inhalation therapy...

Medihaler

Means true nebulization. Each measured dose provides 5 to 8 times as many particles in the ideal size range as conventional nebulizers...

Medihaler

Means an unbreakable Oral Adapter—no movable parts—no glass to break—no rubber to deteriorate...

Medihaler

Means effective medications in an inert aerosol vehicle, in leakproof, spillproof, plastic-coated bottles...

Medihaler

Means utmost patient convenience—medication and Adapter together in plastic case, convenient for pocket or purse...

Medihaler

Means greater economy—no costly glass nebulizers to replace, and one inhalation usually suffices for prompt relief.

Medihaler®

THE UNIQUE MEASURED-DOSE INHALATION METHOD

In Asthma

For Rapid Relief of Acute or Continuing Bronchospasm

Rx Medihaler-Epi™

Riker brand of epinephrine 0.5% solution in inert, nontoxic aerosol vehicle. Each ejection delivers 0.125 mg. epinephrine. In 10 cc. vial with metered-dose valve, sufficient for 200 inhalations.

Rx Medihaler-Iso™

Riker brand of isoproterenol HCl 0.25% solution in inert, nontoxic aerosol vehicle. Each ejection delivers 0.06 mg. isoproterenol. In 10 cc. vial with metered-dose valve, sufficient for 200 inhalations.

Medihaler-Epi replaces injected epinephrine in emergency situations in which respirations have not ceased. It provides rapid relief in acute food, drug, or pollen reactions (including urticaria, bronchospasm, angioneurotic edema, edema of glottis, etc.). In most instances only one inhalation is necessary.

Rx Medihaler Oral Adapter

Note: First prescription for Medihaler medications should include the desired medication and Medihaler Oral Adapter.

Oral Adapter made of hard plastic with no movable parts...foolproof...unbreakable and easily cared for by rapid rinsing...entire set, including medication, fits into neat plastic case small enough to be carried inconspicuously in pocket or purse...the smallest package for nebulization ever produced.

In Angina Pectoris

NEW Medihaler-Nitro™

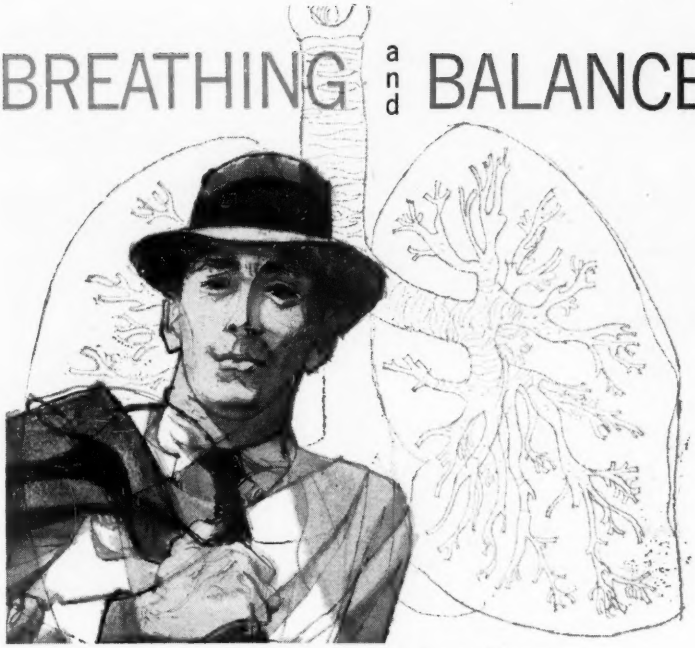
Medihaler-Nitro is 1% octyl nitrite in nebulization form. Outstanding for the emergency relief of acute anginal pain. Each inhalation delivers precisely 0.25 mg. of octyl nitrite. By using the lungs as the most direct portal of entry, faster relief than from orally administered drugs is assured because of proximity of pulmonary and coronary circulations. Faster-acting than nitroglycerin. Fewer side effects than from nitroglycerin or amyl nitrite.

Only one or two inhalations necessary. One full minute should elapse between inhalations. In 10 cc. Medihaler bottle with metered-dose valve.

Riker

LOS ANGELES

BREATHING and BALANCE



in bronchial asthma

Sterane®

brand of prednisolone

whenever corticosteroids are indicated

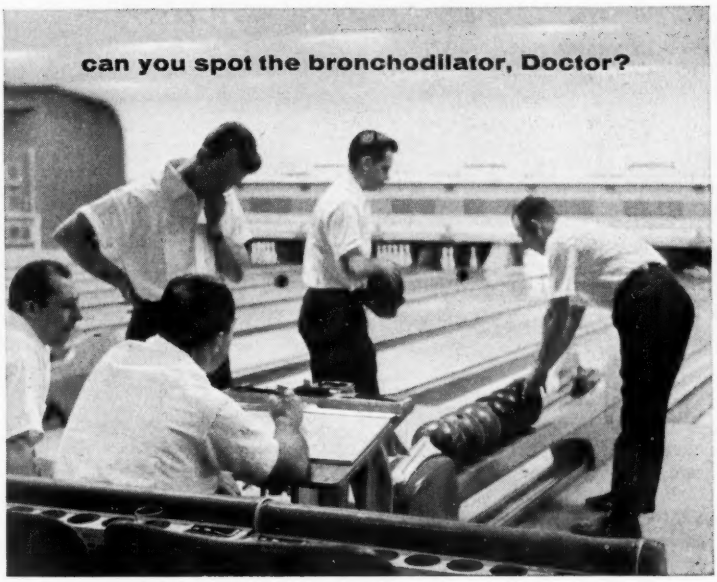
Supplied: White, 5 mg. oral tablets, bottles of 20 and 100. Pink, 1 mg. oral tablets, bottles of 100. Both are deep-scored.

*Schwartz, E.: New York J. Med. 56:570, 1956.

provides restoration of breathing capacity — Relief of symptoms [bronchospasm, cough, wheezing, dyspnea] is maintained for long periods with relatively small doses.*

minimal effect on electrolyte balance—"in therapeutically effective doses . . . there is usually no sodium or fluid retention or potassium loss."* Lack of edema and undesirable weight gain permits more effective therapy particularly for those with cardiac complications.

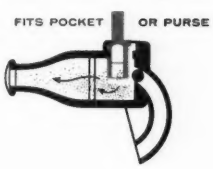
PFIZER LABORATORIES, Brooklyn 6, New York
Division, Chas. Pfizer & Co., Inc.



When you prescribe NORISODRINE in the AEROHALOR, your bronchial asthma patients have fast-acting relief right in the palm of their hands. That's because the AEROHALOR is so small it fits pocket or purse, ready for instant use at the first sign of bronchospasm.

More important, NORISODRINE is almost as quickly effective as intravenous or intramuscular treatment. Yet, serious side effects are minimized because systemic pressor action is insignificant, and dosage can be accurately adjusted to individual need and tolerance.

Why not keep a few AEROHALORS with NORISODRINE in your office so you can get your patients started without delay?



NORISODRINE® **sulfate powder** / *in the* **AEROHALOR®**

(Isoproterenol Sulfate, Abbott) *(Abbott's Powder Inhaler)*

Abbott

6II234

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Please Patronize Our Advertisers First, and Mention ANNALS OF ALLERGY *When Writing Our Advertiser.*

VIRTUALLY
NONSENSITIZING

ANTIPRURITIC

SOOTHING 'PERAZIL'® CREAM

*"Its over-all effectiveness as an antipruritic and the high degree of tolerance to it have made it a very useful preparation."**

promptly relieves itching—in a wide variety of skin disorders—for prolonged periods of time

rapidly allays the intense anal itching associated with pinworms

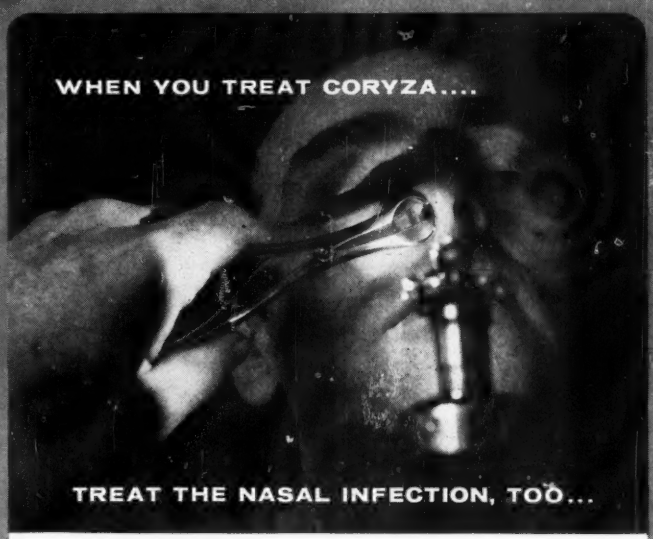
remarkably free of sensitization

'Perazil' brand Chlorcyclizine Hydrochloride Cream 1%. Nongreasy base.

Available in tubes of 1 oz., jars of 1 lb.

*Ayres, S., III, and Ayres, S., Jr.: A.M.A. Arch. Dermat. & Syph. 69:502 (April) 1954.

BURROUGHS WELLCOME & CO. (U. S. A.) INC., Tuckahoe, New York



Specific for the "cold" season with . . .

"more than mere symptomatic relief . . ."[1]

Biomydrin® NASAL SPRAY

Penetration makes the difference . . .

Whenever colds, infection or allergy congest the nasal passages or sinuses, Biomydrin offers prompt relief. The mucolytic action of Biomydrin enables it to reach the site of nasal infection promptly. Within minutes symptoms are relieved.

	Formula	
mucolytic penetrating	Thonzonium bromide	0.05%
antibacterial	Neomycin sulfate	0.1%
	Gramicidin	0.005%
antiallergic decongestive	Thonzylamine HCl	1.0%
	Phenylephrine HCl	0.25%

Supplied: 0.5 oz. plastic atomizer or dropper bottle (yellow cap).

When added anti-inflammatory action is desired, Rx Biomydrin® F—with hydrocortisone alcohol 0.02%. ½ oz. plastic atomizer (red cap).

1. Lazar, A. M., and Goldin, M.: Eye, Ear, Nose and Throat Monthly 32:512, 1953.

NEPERA CHEMICAL CO., INC. Pharmaceutical Manufacturers

Nepera Park, Yonkers 2, N. Y.

B-1200-M

Rapidly replacing

the traditional

single-action,

too-potent vasoconstrictor

*Vasocort**

'Vasocort'—hydrocortisone and 2 decongestants in low concentrations—is the new and milder, yet more effective, intranasal solution specifically developed to reduce inflammation, edema and engorgement in

Acute, Chronic & Allergic Rhinitis

'Vasocort', the new concept of intranasal medication, almost never produces burning, stinging or rebound turgescence. Supplied either as 'Vasocort' Spraypak† or 'Vasocort' Solution—both ½ fl. oz.

***Formula*—'Vasocort' is a stable, buffered, aqueous solution. It contains hydrocortisone alcohol, 0.02%; Paredrine* Hydrobromide (hydroxyamphetamine hydrobromide, S.K.F.), 0.5%; phenylephrine hydrochloride, 0.125%; preserved with thimerosal, 1:100,000.**

Smith, Kline & French Laboratories, Philadelphia 1

*T.M. Reg. U.S. Pat. Off.
†Trademark

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